EuroTech COMMUNICATION

# VOIP²ALL GATEWAY

## User Guide

## 32ch/32 SIM 2E1/VoIP (1U) (Unibox)

**Version 3C10.3P**

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# 1. INTRODUCTION TO THE VOIP²ALL GATEWAY

The Eurotech Communication team is glad you have chosen to use the VoIP²ALL Gateway. We are confident that due to the quality of our product, simplicity of use and excellent customer support, the VoIP²ALL Gateway will meet your communication needs.

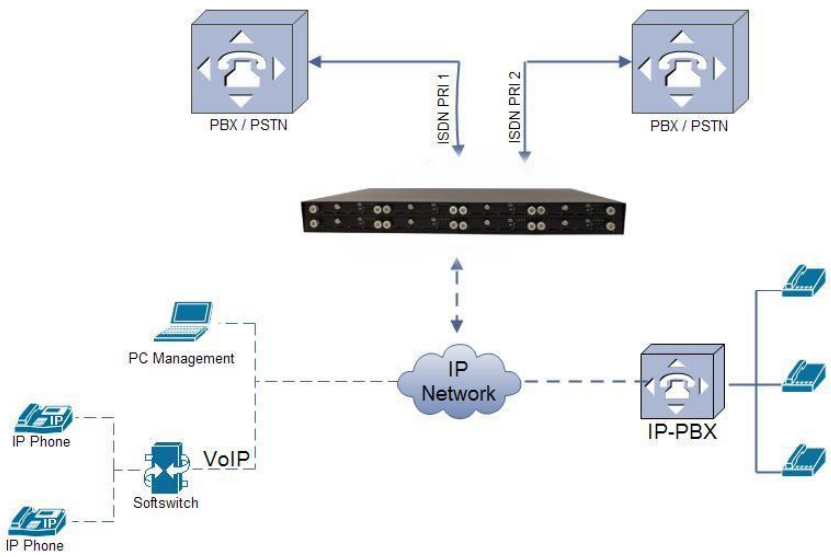
The goal of our experienced team of engineers, who develop and produce our products, is to meet the growing demands of our customers in today's communications world.

We hope you enjoy using the VoIP²ALL Gateway and appreciate any comments you may have as we always strive to improve our products and personal service for all of our customers.

## 1.1. THE VOIP²ALL GATEWAY SOLUTION OVERVIEW

The 32 Channel 2E1/VoIP (1U) Gateway, or 1U 32CH for short, can connect VoIP calls to cellular networks (GSM|ISDN). The VoIP²ALL contains a SIP Server that can register up to **92** VoIP clients and connect each of these VoIP clients to the cellular network directly, therefore completely bypassing the local landline telephone company. The 2E1/VoIP has up to 32 SIM ports. Each cellular port has one local SIM.

The 32 channel 2E1/VoIP can work simultaneously to provide both ISDN & GSM and VoIP calls




## 1.2. ABOUT THIS MANUAL

This manual is for use with the 32 channel 2E1/VoIP (1U) Gateway.

Our VoIP stand-alone unit product range is:

- 2ch- For SOHO and SMB'S

- 4ch- corporate
- 8ch- enterprise
- 16ch-24-32ch –Enterprise and heavy duty traffic

All of the above units are compatible for use in our SIM Server System

## 1.3. TERMINOLOGY

The following is a list of important terms used in this guide and their definitions:

- **Gateway** – A VoIP²ALL unit with cellular ports.
- **SIM** – SIM card or chip
- **SIM Server** - A VoIP²ALL series unit with a SIM Server program containing SIM cards and no cellular cards.
- **Internal SIM Server** – A SIM Server program that runs on a Gateway, allowing access to SIM cards in the Gateway.
- **External SIM Server** – A SIM Server program that runs on an external SIM Server, or another Gateway, allowing access to SIM cards in the external SIM Server.
- **Master card** – A card that controls the operation of the VoIP²ALL, containing a DSP processor with a Linux based operating system.
- **Port (ch)** – A port is single channel that can send call(s).
- **Cellular Card (Slave card)** – A card with cellular ports (modules).
- **SIM Server Card** – A SIM Server card that has 32 SIM sockets, which is located in a SIM Server or Gateway.
- **VoIP** – A protocol for transmitting voice calls on Ethernet networks.
- **SIP** – A protocol for registering VoIP clients and making VoIP calls.
- **SIP Server** – A virtual PBX that can register and connect SIP phones.
- **SIP Account** – A user name and password which is given to register a SIP phone.
- **SIP Registration** – The process of the initial connection of the SIP account to the SIP Server.
- **SIP Client** – A SIP phone that is registered in a SIP Server.
- **Internal SIP Server** – The SIP Server that is built into the Gateway.
- **SIM Registration** – The activation of the SIM in a cellular network. The SIM must be registered to make calls.
- **Local SIM** – A SIM on a cellular card.
- **Virtual SIM** – A SIM from a SIM Server.

# 2. INSTALLATION AND SETUP

This section will guide you through the installation and setup process, including basic configuration and a system test to ensure that all components are working properly. These steps are **MANDATORY** to run the VoIP²ALL, unless otherwise indicated.

After completing this section your Gateway is functional for basic operations. You may choose to make further configurations. For details, see ***Advanced Configuration*** on page 19.

## 2.1. INSTALLATION OVERVIEW (GETTING STARTED)

Perform the following steps to install and setup your system:

1) Check the items delivered in your package - see ***Check the Package Items*** on page 5.
2) Install SIMs - see ***Hardware Installation*** on page 5.
3) Connect LAN cables, antennas and power supply - see ***Connecting Cables*** on page 7.
4) Power up the Gateway.
5) Perform basic setup - see ***Basic System Setup (Basic Operations)*** on page 9.
6) Make basic system configurations - see ***Basic Configuration*** on page 11.
7) Test the Gateway - ***Basic System Test*** on page 16.
8) (Optional) Make advanced system configurations - see ***Advanced Configuration*** on page 19.

## 2.2. CHECK THE PACKAGE ITEMS

Make sure that your package contains the following components before installation:

- Main Hardware Device - The VoIP²ALL Gateway
- Quick Installation Guide – for brief installation explanations
- Cellular Antennas
- 3 LAN Connection Cable/E1 regular cable
- 2X E1 cross cables (red)
- USB cable. This facilitates debugging and direct access to the configuration files. This is referred to as the 'Com Cable' in this manual
- Input: 110/240 V AC 50-60 Hz, Output: 12 V DC adapter (2,4 and 8 ch Gateways) or power supply cable

## 2.3. HARDWARE INSTALLATION

This section describes how to install the VoIP²ALL Gateway Hardware.

### 2.3.1. HARDWARE OVERVIEW

The Gateway (1U) consists of three main parts:

- Chassis – Housing a power supply 12v DC and a motherboard. The motherboard contains a data bus that connects all of the cards.
- Master Card – Located at the back of the gateway contains the LAN and USB com connections and E1 and E2 sockets and power inlet.
- Cellular Cards – Located on the front panel of the unit. Each card contains 4 cellular ports. Each port has one local SIM. Each card has one antenna connection for all 4 ports.

Front Panel

Back Panel

### 2.3.2. INSTALLING SIMS

The following sections describe how to install SIMs in the VoIP²ALL Gateway.

### 2.3.2.1. INSTALLING LOCAL SIMS

On the bottom of each cellular card there are 4 labeled ports to install SIM cards.

- ***To install a SIM in a cellular card:***

1. Locate the ICC - Port on the cellular card.

2. Position the SIM in the port SIM socket so that the SIM's metal contact is facing up and the snubbed edge is on the right hand side directed into the SIM socket.
3. Gently push the SIM card into the SIM socket until you hear a click. The SIM is now installed.

#### 1.2.3.2.1. REMOVING LOCAL SIMS

- ***To remove a local SIM***

1) Locate the port containing the SIM you want to remove.
2) Press gently on the SIM until you hear a click.
3) Pull the SIM from the socket completely.

Important: Do not leave the SIM half way in or out. This will disable the port from loading SIMs from the SIM Server.

## 2.3.3. CONNECTING CABLES

On back panel (master card) connect the following:

- LAN cable - The LAN cable is used to connect the system to the internet network. (white)
  - E1 and E2 ISDN cross cables.(red)

  - Power Supply Cable - Connect the power supply cable from your 110-240V 50-60Hz power outlet to the VoIP²ALL Gateway power connector/adapter.
  - USB COM Cable – The COM connection is not essential for day to day use.

On the front panel

- Antennas – Connect antenna cable for each cellular card.
  Position the antennas at least 40 centimeters apart and more than 1.5 meters from the Gateway.

## 2.4. SOFTWARE INSTALLATION

Configuration is performed on an auxiliary computer by WEB GUI.

- ***To use the WEB GUI Management***

1) After **power-on** of the unit **wait 3-5** minutes and then follow the next steps
2) Open Google chrome or Internet explorer
3) Input the gateway IP address i.e. 10.16.2.245 (default address of the gateway)
4) If the screen does not show, recheck your IP address settings.

# 3. BASIC SYSTEM SETUP

This section describes how to perform basic configurations and operations in the Gateway.

The Management application gives you access to all of the tasks you need to use VoIP²ALL system.

The first tasks you need to perform are:

- ***Connecting to the Gateway*** on page 9
- ***Setting the Clock*** on page 10
- ***Changing the Gateway's IP Address*** on page 10

## 3.1. CONNECTING TO THE GATEWAY

- ***To connect to the gateway:***

1) In Address bar of the Chrome, enter the IP Address of the Gateway and press Enter. The following window will apear.

2) Enter the Login password of the Gateway (The default password is admin) and click **Login**."

Note: If you can't remember the IP Address see ***Appendix A: Working with COM Port*** on page 67.

If the PC does not have an IP address in the same Subnet as the Gateway, see ***Appendix C: PC to Gateway Direct LAN Access*** on page 72.

## 3.2. SETTING THE CLOCK

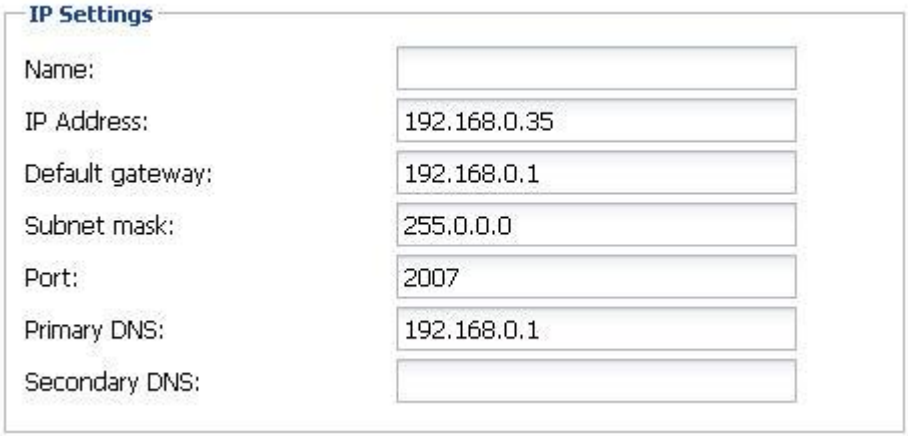
### *To set the clock:*

1) On the Main Toolbar, click **System settings**
2) Click **System settings** tab**.**
3) In **Date**, define the required date.
4) In **Time**, define the local time.
5) In **Date Format**, select the format in which the date is displayed, (e.g. Day/Month/Year or Year/Month/Day).
6) Click **Save**.

## 3.3. CHANGING THE GATEWAY'S IP ADDRESS

### *To change the IP Address of the Gateway*

1) On the Main Toolbar, click **General settings**
2) Click the **General settings** tab.
3) In **IP Settings,** enter the new **IP Address, Default Gateway, and Subnet Mask**.
4) Click **Save**.




Note: Wait 30 seconds for the configuration to be saved so that the changes will be applied when the Gateway is restarted.

## 3.4. BASIC CONFIGURATION

This section includes the following basic configurations:


- ***SIM Configuration*** on page 11
- ***SIP Configuration*** on page 13
- ***Prefix Configuration(Call Handling)*** on page 13
- ***LAN Configuration*** on page 14


### 3.4.1. SIM CONFIGURATION

Before making a call from a Gateway port, the port SIM must be registered in the network.

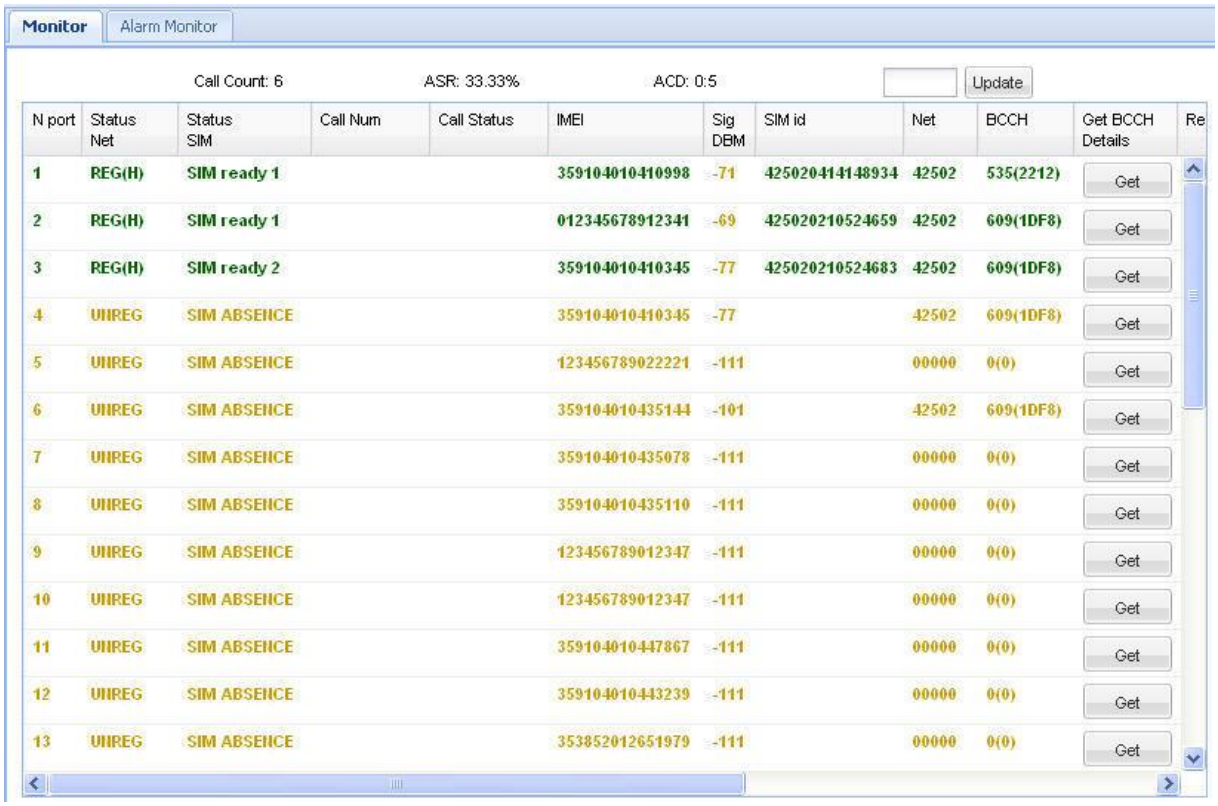
There are two basic modes for the Gateway to work:

- **Active by Default** - The local SIM will register in the cellular network automatically when inserted.
- **Work by Time Table** - The local SIM will register in the cellular network only when preset in the time table. For details, see ***Timetable*** on page 21.

- ***To set the local SIM to register by default:***

1) On the Main Toolbar, click **Cellular**. you will see list of all the ports.
2) Select the **General** tab.
3) In **SIM Registration Mode,** select **Local SIM work by default**.
4) Click **Save**.

5) On the Main Toolbar, click **Monitor** to view the status of the cellular ports**.**
When the SIM is registered correctly, the port monitor appears in green.




| N port | Status Net | Status SIM | Call Num | Call Status | IMEI | Sig DBM | SIM id | Net | BCCH | Get BCCH Details | Re |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | REG(H) | SIM ready 1 | | | 359104010410998 | -71 | 4250204141489 34 | 42502 | 535(2212) | Get | |
| 2 | REG(H) | SIM ready 1 | | | 012345678912341 | -69 | 425020210524659 | 42502 | 609(1DF8) | Get | |
| 3 | REG(H) | SIM ready 2 | | | 359104010410345 | -77 | 425020210524683 | 42502 | 609(1DF8) | Get | |
| 4 | UNREG | SIM ABSENCE | | | 359104010410345 | -77 | | 42502 | 609(1DF8) | Get | |
| 5 | UNREG | SIM ABSENCE | | | 123456789022221 | -111 | | 00000 | 0(0) | Get | |
| 6 | UNREG | SIM ABSENCE | | | 359104010435144 | -101 | | 42502 | 609(1DF8) | Get | |
| 7 | UNREG | SIM ABSENCE | | | 359104010435078 | -111 | | 00000 | 0(0) | Get | |
| 8 | UNREG | SIM ABSENCE | | | 359104010435110 | -111 | | 00000 | 0(0) | Get | |
| 9 | UNREG | SIM ABSENCE | | | 123456789012347 | -111 | | 00000 | 0(0) | Get | |
| 10 | UNREG | SIM ABSENCE | | | 123456789012347 | -111 | | 00000 | 0(0) | Get | |
| 11 | UNREG | SIM ABSENCE | | | 359104010447867 | -111 | | 00000 | 0(0) | Get | |
| 12 | UNREG | SIM ABSENCE | | | 359104010443239 | -111 | | 00000 | 0(0) | Get | |
| 13 | UNREG | SIM ABSENCE | | | 353852012651979 | -111 | | 00000 | 0(0) | Get | |

### 3.4.2. SIP CONFIGURATION

The Gateway has an internal SIP Server that is able to register up to 32 SIP clients. A SIP client can be a:

- VoIP phone
- External SIP Server
- IP PBX/ Soft switch

By default, the internal SIP Server works without authentication. You can register without a password and choose any user name. The user name must be a number.

- ***To configure YOUR SIP to send calls to the Gateway without registration***

1) Open **YOUR** SIP Configuration in the external **SIP Server** or **IP PBX**.
2) Configure your SIP to send calls to the Gateway, according to the following parameters:
   - The **SIP Server IP Address** - the IP address of the gateway
   - The **SIP User ID** (optional) - the defined user name for this SIP client
   - The **Authentication Password** (optional) - the defined password for this SIP client
3) Save the configuration settings.

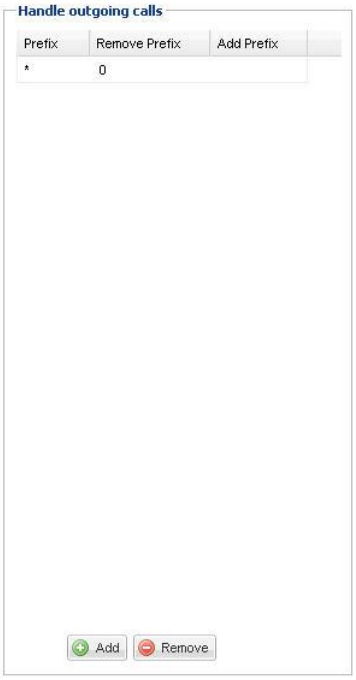
### 3.4.3. PREFIX CONFIGURATION (CALL HANDLING)

Each port can have a list of defined prefixes. When a number is dialed, the Gateway checks the prefix table and routes the call to a port according to the dialed prefix. The first matched prefix on the list is selected.

If more than one port has a matching prefix, the Gateway creates a prefix group of these ports and divides calls with this prefix amongst the group.

- ***To configure a prefix to a port:***

1) On the Main Toolbar, click **Cellular**.
2) Select a **Port** from the list.
3) Select the **Call Handling** tab. A prefix table for the selected port is displayed.
4) Enter the prefixes you want to add to this port in the table.




There are these two rules:

- The default prefix is ***.** If the prefix of a port is *, then all the calls that do not match a prefix in another port are routed through this port.
- If two or more ports have the same prefix then the Gateway will divide the calls between the ports.

Note: To avoid losing calls, make sure that the cellular prefix is different than the VoIP and Host prefixes.

5) (Optional) You can modify the dialing number received from the SIP which the Gateway uses to dial out by using the following parameters:
   - **Remove Prefix** - Select how many *digits* to remove from the beginning of the dialed number.
   - **Add Prefix** - Enter the *digits* to be added at the beginning of the number.
6) Click **Save**.

The following example describes how prefix configurations affect the dialed numbers:

Prefix = 4407

Remove Prefix = 2

The Original number = 44077555555.

The Dialed number = 0775555555.

### 3.4.4. LAN CONFIGURATION

When the Gateway is working behind NAT or a Firewall, you must make sure that the ports of the Gateway are accessible from the public IP to the Gateway local IP.

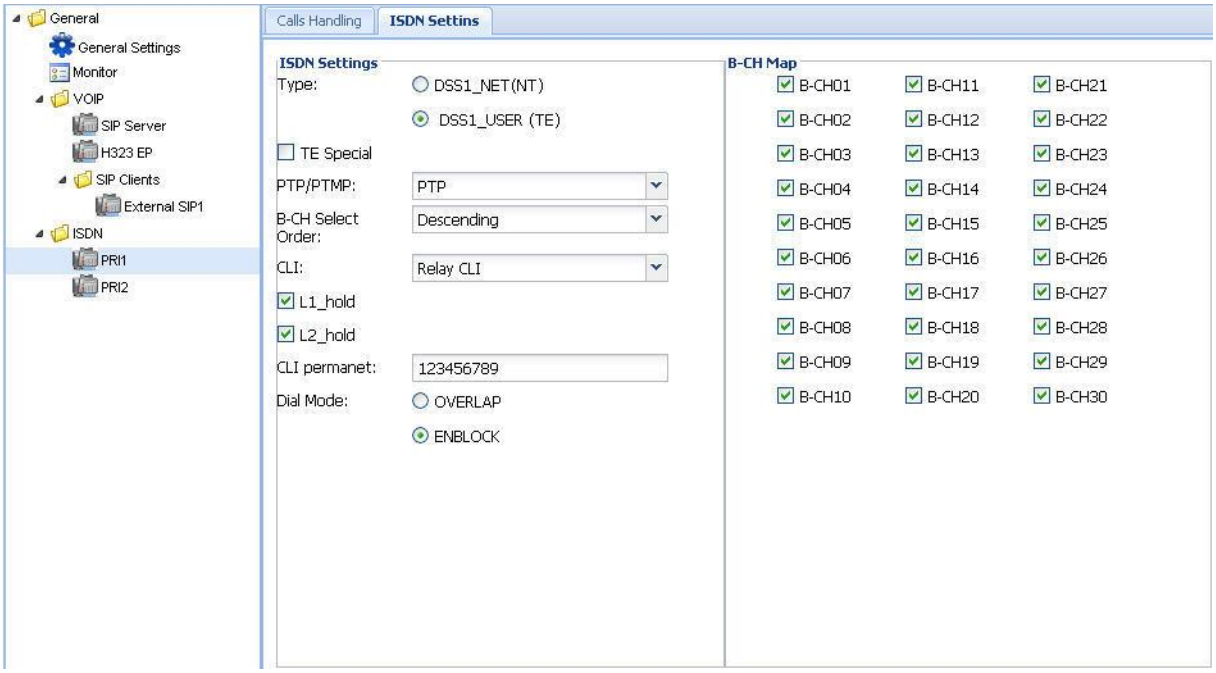
The following ports need to be forwarded to the Gateway:

- Port **80** - to make connection with the web GUI (Opened in most NAT by default).
- Port range from **5060** to **7066** - for the SIP registration and calls.

## 3.5. CONFIGURING ISDN (OPTIONAL)

- ***To configure ISDN settings: E1***

1) From the Main Toolbar, click **ISDN**.
2) Select **PRI1** port from the list.
3) Select the **ISDN settings** tab. You will see the **default settings** as following:




- Network protocol type is TE, (verify that the connected E1 unit is NT).

Note: To change the Type from TE to NT, see ***Appendix D: E1-1 & E1-2 Dipswitch Settings***.

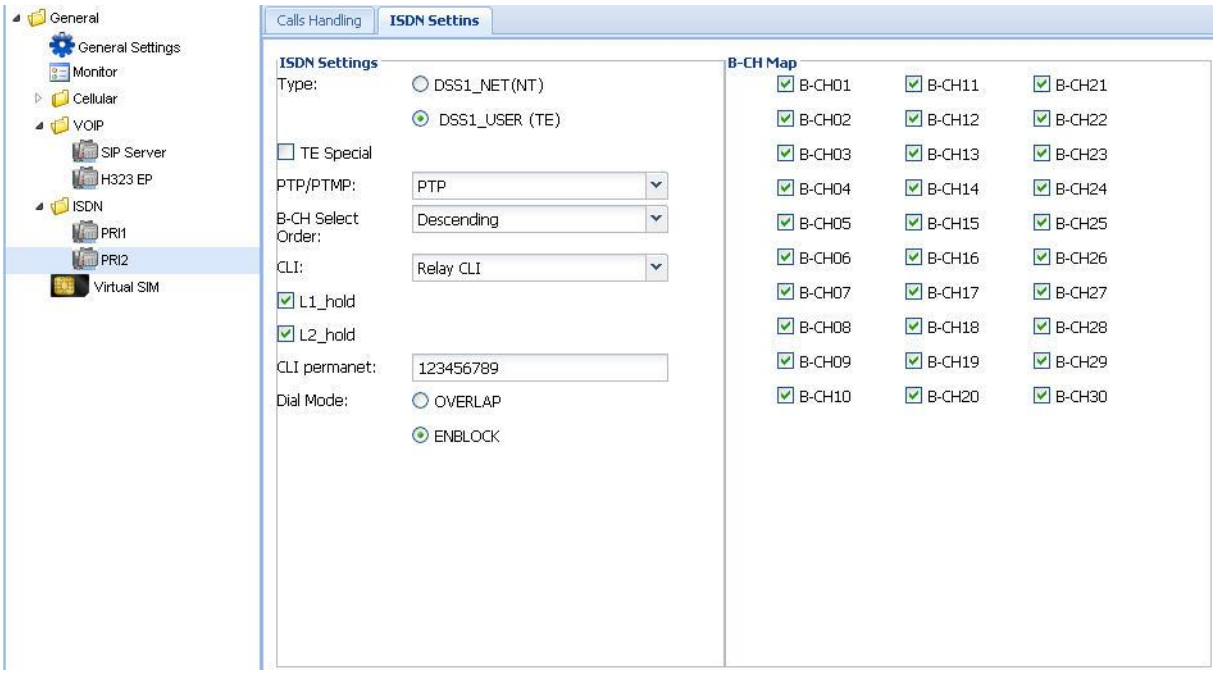
- PTP is point to point connection,( verify that the connected E1 unit is PTP)
- Bch select order- Descending
- CLI- Relay CLI, if set to **fixed** it will use the number in CLI permanent
- Dial mode- ENBLOCK
- Debug IP- 192.168.0.126
- Debug port-10000
- Bch- all channels will be marked

4) Click **Save**

- ***To configure ISDN settings:E2***

1) From the Main Toolbar, click **ISDN**.
2) Select **PRI2** port from the list.

3) Select the **ISDN settings** tab. You will see the **default settings** as following:




- Network protocol type is TE, (verify that the connected E1 unit is NT)

Note: To change the Type from TE to NT, see ***Appendix D: E1-1 & E1-2 Dipswitch Settings***.

- PTP is point to point connection,( verify that the connected E1 unit is PTP)
- Bch select order- Descending
- CLI- Relay CLI, if set to **fixed** it will use the number in CLI permanent
- Dial mode- ENBLOCK
- Debug IP- 192.168.0.126
- Debug port-10000
- Bch- all channels will be marked

5) Click **save**

- ***To configure Call handling (prefix) settings: follow chapter 2.5.5.3 for both PRI1 and PRI2***

## 3.6. BASIC SYSTEM TEST

Once you have completed the basic configuration described in the previous sections, you can now test that the system is functioning normally using the following procedures.

- ***To call from your SIP client through the Gateway to the cellular network:***

1) On the Main Toolbar, click **Monitor**.
2) Send a call from your SIP to the Gateway.
3) Check the monitor to see that the number was dialed correctly and the call was connected.

### Troubleshooting

In case the call was not connected, check the following:

- Confirm that the number was compatible with the network by dialing this number directly from your mobile phone.
  If you see that the number is not accepted, reconfigure the port prefix table to allow this number. See ***Prefix Configuration (Call Handling)*** on page 13.
- If the call is not displayed on the monitor:
  - Change the prefix of this port to * and retry.
  - If the call is accepted but not connected - reconfigure the port prefix and retry.
- If the call is still not displayed - check that this prefix is not assigned to another port (i.e. VoIP, H323, and Host). If so, reconfigure that port's prefix so it does not conflict and retry.
- If the call is still not displayed - check that the ports are forwarded to the Gateway, specifically port 5060 to 7066.

If the call is connected but there is no audio:

- Check that the ports are forwarded to the Gateway, specifically port 5060 to 7066.
- Check the audio directly with a SIP phone by bypassing the IP PBX.

### Testing a port with a VoIP phone

Perform the following test to ensure that your audio is functional by bypassing the public IP.

- ***To register a VoIP phone in the Gateway***

  1) Open the VoIP phone configuration.
  2) Configure the VoIP phone according to the following parameters:
     - The **SIP Server IP Address** - the IP address of the Gateway
     - The **User ID** (optional) - the defined user name for this SIP client
     - The **Authentication Password** (optional) - the defined password for this SIP client
  3) Save the configuration settings.

- ***To call from your VoIP phone through the Gateway to cellular network:***

  1) In the port you wish to use, configure the prefix to *. See ***Prefix Configuration (Call Handling)*** on page 13.
  2) Dial the number of the mobile phone.
     The call is routed to the mobile phone through the port.
  3) Check that the audio in the local network is functional.
     If so, then the Gateway is functional and the audio problem is caused because ports 5060 to 7066 are not accessible from the public IP. Check your IP settings.

### Testing a port with an ISDN

From a PSTN Office phone attached to a PBX / VoIP Gateway try to make a call to a defined cellular cell phone in the cellular network around you.

### Troubleshooting

In case of a failure, verify the following:

- The PRI is configured properly to your PBX / VoIP gateway.
- The connection is properly attached and not disconnected.

- The cable itself is not malfunctioning.
- The cellular network signal is too low.
- The cellular modules are not compatible with the mobile network around you.
- The SIM installed is not compatible with the Multi-Cell system.

Note: We are using SIM of 3V only (5V SIMs or other voltage will not work).

- The SIM card used requires a pin code.

**In case you still have errors to operate the system, it is recommended to review the "**Getting Started**" chapter tasks and make sure you did follow the instructions properly**

## 3.7. WHAT'S NEXT?

After you have completed the installation and basic system setup, you can choose to perform the following:


- ***Advanced Configuration*** on page 19
- ***Configuring the SIM Server*** on page 33
- ***Modifying System Settings*** on page 51
- ***Configuring Special Features*** on page 53
- ***Monitoring Calls*** on page 62

# 4. ADVANCED CONFIGURATION

The following sections describe how to perform advanced configuration in the VoIP²ALL Gateway:


- ***Advanced SIM Configurations*** on page 19
- ***Cellular Outgoing Call Configurations*** on page 27
- ***Cellular Incoming Call Configurations*** on page 30
- ***Configuring the SIM Server*** on page 33
- ***Modifying System Settings*** on page 51
- ***Configuring Special Features*** on page 53


## 4.1. ADVANCED SIM CONFIGURATIONS

For each cellular port there is a Local SIM. Each port's SIM can work only with that cellular port.

There are two basic modes of working with the Local SIM:

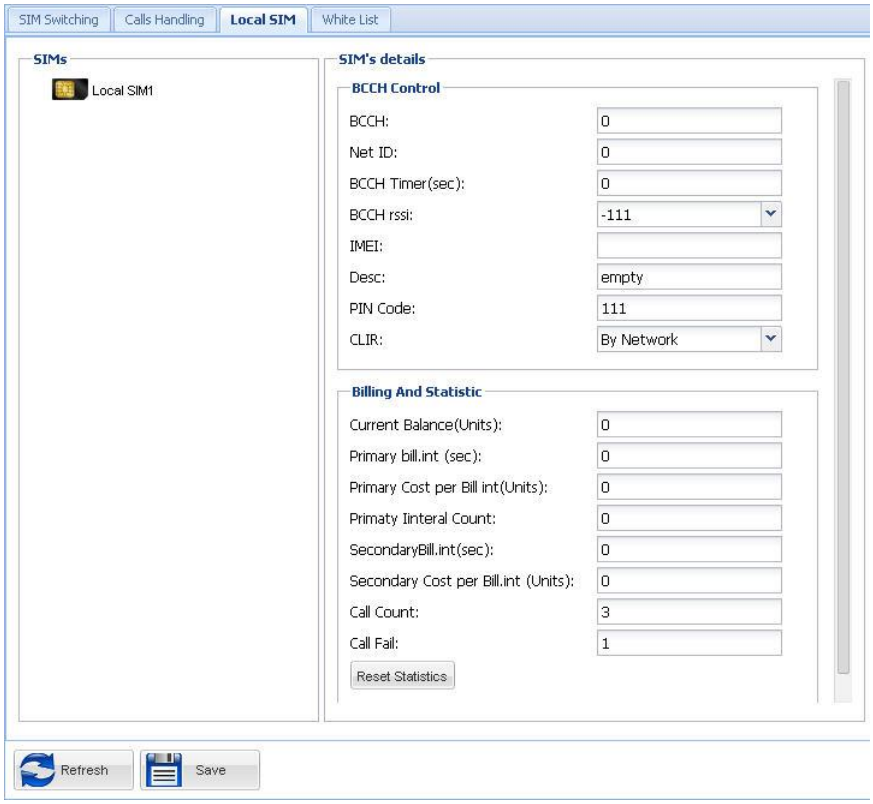
- **Active by Default** - The Local SIM will register in the cellular network automatically when inserted.
- **Work by Time Table** - The Local SIM will register in the cellular network only when preset in the Time Table. For details, see ***Assigning a Local SIM to Work by Time Table*** on page 21.

Each Local SIM can be configured with its own parameters which take effect when the Local SIM is registered on the cellular network.

- ***To configure the Local SIM:***

4) On the Main Toolbar, click **Cellular**.
5) Select a port from the port list.

6) Select the **Local SIM** tab. The following window appears:




7) Define the parameters as needed. See the following table for parameters and their descriptions:

| PARAMETER | DESCRIPTION |
|---|---|
| PIN Code | The PIN Code for the SIM when it is PIN Code protected. |
| CLIR | Show or Hide the number of the SIM |
| Net ID | Lock the SIM on a specific network. |
| BCCH | Lock the SIM on a specific BCCH.<br>When this parameter is empty, the SIM locks on the best reception BCCH. |
| BCCH Timer | This function rotates the BCCH.<br>The rotation is performed according to the BCCH Timer, measured in seconds, between all BCCH which have better reception than the BCCH rssi.<br>When using the BCCH Timer, the BCCH parameter must be empty. |
| BCCH rssi | The minimum reception for rotation. |

| CALL DURATION PARAMETERS | |
|---|---|
| **PARAMETER** | **DESCRIPTION** |
| Current Balance | The total number of units for the SIM.<br>A value greater than 0 must be defined. |
| Primary Bill Interval | The interval of time (in seconds) for the beginning of the call. |
| Primary Interval Count | The number of times the Primary Bill Interval will repeat. |
| Primary Cost per Bill Int | The number of units the Primary Bill Interval will count. |
| Secondary Bill Interval | The intervals of time (in seconds) after the end Primary Bill Interval. |
| Secondary Cost per Bill Int | The number of units the Secondary Bill Interval will count. |
| Recharge Value | The number of units to recharge the Current Balance at the Top Up Day |
| Balance Top Up Day | The day to recharge the Current Balance. |
| **STATISTICS (READ ONLY)** | |
| Call Count | The number of calls the SIM made the last time it was connected. |
| Call failed | The number of failed calls the SIM made the last time it was connected. |

8) Click **Save**.

### 4.1.1. REGISTERING THE LOCAL SIM IN THE CELLULAR NETWORK AUTOMATICALLY

When the Local SIM is active by default it registers in the cellular network automatically when inserted in the SIM socket.

To set the SIM to be active by default:

1) From the Main Toolbar, click **Cellular**.
2) In the port list, select **General**.
3) In SIM Registration Mode, select **Local SIM work by default**.
4) Insert the SIMs to the cellular port's Local SIM sockets.
5) On the Main Toolbar, click **Monitor**. The monitor window appears displaying the status of the cellular ports.

### 4.1.2. ASSIGNING A LOCAL SIM TO WORK BY TIME TABLE

When the Local SIM is active by Time Table it registers in the cellular network according to the schedule defined here.

When you set the time table, you mark a SIM from the SIM server to work at a specific time.

***To define a Time Table:***

1) From the Main Toolbar, click **Cellular**.
2) In the ports list, select **General**.
3) In SIM Registration Mode, select **All SIM work by time table.**
4) Select a port from the ports list.
5) Select **SIM Switching** tab
6) Open the Local SIM folder and select **Local SIM**1
7) In **Type**, select the type of schedule you want to define from the following options:
   - **Monthly** - The table will show all the days of the month.
   - **Weekly** - The table will show all the days of the week.
8) In **Swapping Type**, select one of the following options:
   - **Time Table** - The SIM is replaced at the end of its defined time in the Time Table. In this mode you set up a Time Table and define which SIM will work in which hour.
   - **Call Duration** - The SIMs are replaced when they end their defined calling minutes. In this mode you define a list of SIMs in the table. For each SIM in the list you define the amount of calling units to be used. Each SIM will work for the defined calling minutes and then be replaced with the next SIM on the list.
   - **Manual** - This gives you the option of manually connecting a SIM immediately. This is recommended for temporary use only, generally by support in the debug process, select YES to change to this mode.
9) In the Time Table, define the hour and day for the Local SIM to register.
   In the time table you can see all the defined SIM.
10) Click **Save**.
11) Insert the SIMs to the cellular ports Local SIM sockets.
12) At the defined time, the Local SIM will register in the cellular network.

### 4.1.3. ASSIGNING A LOCAL SIM TO WORK FOR A LIMITED CALLING TIME

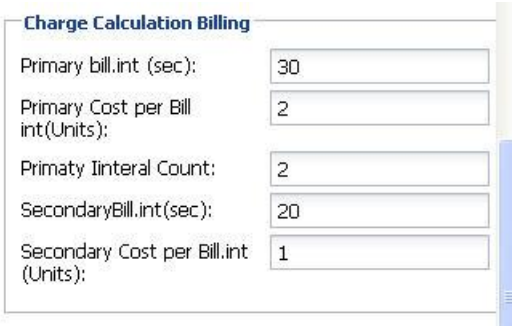
In the Call Duration mode, each SIM works for a defined number of call minutes.

At the beginning of the day, the Gateway registers a SIM from the list and then counts down the number of units defined for that SIM until it reaches 0.

The Gateway then registers the next SIM from the list. This process continues until all of the SIMs on the list have finished their defined time units.

The Gateway resets the time unit count to the original definitions at the beginning of every month or week, depending on the **Type** selected in the **Time Table**.

### The calculation of the units per interval




The Gateway calculates the call duration by intervals. An interval is a minimum billing duration. When making a call shorter than 1 interval, you will be charged the entire interval cost.

You must define the cost and time duration of the intervals.

Calculations are as follows (See the parameters in the figure above.):

- At the beginning of the call the Gateway counts the units according to the **Primary bill interval.**
- The number of units for each interval are defined in **Primary Cost per billing interval.**
- This **Primary bill interval** is repeated according to the number of times defined in **Primary Interval Count**.
- The rest of the call uses the **Secondary Bill Interval**.

For example (when the intervals are set as in image above):

For a call of 1 minute and 59 seconds, the unit calculations are:

- From the beginning of the call, two 30 second intervals (**Primary bill. int**) according to the **Primary Interval Count** for a total of 1 minute.
- Each interval is 2 units according to the **Primary Cost per bill int.** definition.
  Therefore, the charge calculation is: 2 intervals of 2 units per interval = 4 units
- The remainder of the call takes 3 intervals of the **Secondary Bill Interval** for 59 seconds.
  Therefore, the charge calculation is: 3 intervals of 1 unit per interval = 3 units.

The total amount of units for this call will be 4 + 3 = 7 units.

### Current Balance

The Current Balance is the number of units the SIM has left to use.

At the end of each call the unit count is updated. Once the Current Balance of a SIM has reached 0, you will not be able to work again with that SIM until you set a new balance.

There are two common methods of counting units:

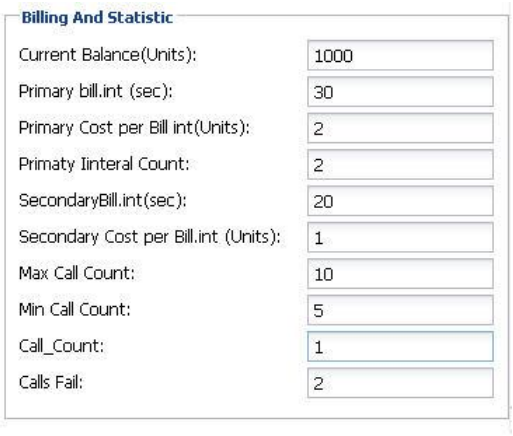
- seconds
- minutes

If you are working by seconds and you want to limit the Current Balance to a specific number of minutes, the Current Balance (units) must be the number minutes X 60.

- ***To configure the SIM Call Duration parameters:***

1) On the Main Toolbar, click **Cellular**.

2) Select a port from the port list.
3) Select the **Local SIM** tab. The following parameters window appears:




4) Define the following parameters:
   - Current Balance
   - Primary Bill Interval
   - Primary Interval Count
   - Primary Cost per Bill Int
   - Secondary Bill Interval
   - Secondary Cost per Bill Int
5) Click **Save.**

- ***To define the Call Duration SIM list:***

1) On the Main Toolbar, click **Cellular**.
2) From the ports list , select a port.
3) In **Type**, select a Time Table type.
4) In **Swapping Type**, select **Call duration**.
5) Check the **Local Sim** box,
6) Insert in **Call Duration** the amount of units
7) click a day.
8) Select **Add**
9) To unselect the cell, click remove.
10) Click **Save**.

## 4.2. CONFIGURING THE INTERNAL SIP SERVER

The Gateway has an internal SIP Server that is able to register up to 92 SIP clients. A SIP client can be a:

- VoIP phone
- External SIP Server

- IP PBX/Softswitch

The internal SIP Server can work with or without authentication. When working with authentication, the SIP account must be entered into the **Users** list.

### *To configure the SIP Server:*

1) On the Main Toolbar, click **VoIP.**
2) Select the **SIP Server**.
3) Select the **SIP Settings** tab.
4) In the Internal SIP Settings section of the window, define the following parameters:
   - **SIP Port** - The TCP port of the SIP Server. The default is 5060.
   - **RTP Start Port** - The first port in the RTP port range. The default is 5066 .

Note: The SIP & RTP ports can be from 5060 to 32768.

The gateway uses for the RTP a range of 2000 ports from the RTP Start Port.

   - **RFC2833 Payload Type** - The type of payload to be used by the SIP. The default is 101.
   - **Codec 1 - Codec 4** -
     The priority of the Codec which the SIP Server uses when making outgoing VoIP calls.

Note: the Codec for the incoming calls from SIP is determined by the SIP that sends the calls to the Gateway. If no requested Codec is available it will be selected by the Codec Priority.

   - **Authentication** - When enabled a user name and password is required to register the VoIP²ALL in the internal SIP Server.
   - **Realm** - The name of the SIP Server realm of operation.
5) Click **Save**.

### *To register SIP client without authentication:*

1) Open the configuration page of your SIP phone.
2) Configure the account with these parameters:
   - The **SIP Server IP Address** - the IP address of the Gateway.
   - The **SIP User ID** - the chosen number for this extension.
   - The **Authentication Password** - you can leave empty.
3) Save the registration settings.
4) Register with the new account.
5) In the VoIP²ALL software, on the Main Toolbar, click **VoIP**.
6) Select the **SIP Status** tab. If the SIP phone is registered, it will appear in the **User Count** list.

### *To register a SIP client with authentication:*

1) On the Main Toolbar, click **VoIP**.
2) Select the **SIP Server**.
3) Select the **SIP Settings** tab.
4) In the Internal SIP Settings section of the window, click the **Authentication** box.

5) Click **Save**.
6) On the Main Toolbar, Click **General Settings**.
7) Select **Users**.
8) At the bottom of the window, enter account details in the following fields:
   - **First and Last Name** - the chosen name for this user.
   - **VoIP Num** - the chosen extension number for this user.
   - **Password**- the chosen authentication password for this user.
   - The remaining parameters are not relevant and should be set to **0**.
9) Open the configuration page of your SIP phone.
10) Configure the registration with this parameters:
   - **SIP Server IP Address** - the IP address of the Gateway.
   - **SIP User ID** - the **VoIP Num** of the user.
   - **Authentication Password** - the **Password** of the user.
11) Save the registration settings.
12) Register with the new account.
13) In the VoIP²ALL software, on the Main Toolbar, click **VoIP**.
14) Select the **SIP Status** tab. If the SIP phone is registered, it will appear in the **SIP Users** list.

## 4.3. USERS LIST

The User list is a list of SIP authenticated users. This allows the system administrator to define which users have access to special features.

***To add a new user to the list:***

1) On the Main Toolbar, Click **General Settings**.
2) Select **Users**.
3) In the fields below the User list, define the following parameters:
   - First Name
   - Last Name
   - VoIP Number (user name)
   - GSM Number
   - PSTN Number (not relevant, By default 0)
   - Capabilities - Which special features the user can access (By default 0).
   - Password - The SIP authentication password.
4) Click **Insert**.

***To update a user:***

1) On the Main Toolbar, Click **General Settings**.
2) Select **Users**.
3) Locate the user on the User list.

4) Update the user number value information as needed.
5) Click **Update** at the end of the user's row.
6) Click **Yes** to confirm the update.

***To delete a user:***

1) On the Main Toolbar, Click **General Settings**.
2) Select **Users**.
3) Locate the user on the User details list.
4) Click **Delete** at the end of the user row in the list.
5) Click **Yes** to confirm the deletion.

***To find a user in the list:***

1) On the Main Toolbar, Click **General Settings**.
2) Select **Users**.
3) In **Search Users**, select the value type to search by.
4) In **Search field**, enter the value to search by.
5) Click **Search**.
   The list displays all the users that match the search criteria.
6) To return to the complete list click **Refresh**.

## 4.4. CALL HANDLING

This section describes how to handle outgoing and incoming calls to the Gateway.

All calls arrive to the Call Manager. The Call Manager then directs the calls accordingly.

For each port you define which numbers the port uses to dial out and how to handle the incoming calls.

The basic method of directing outgoing calls is by the prefix of the dialed number.

### 4.4.1. HANDLING OUTGOING CALLS (PREFIXES)

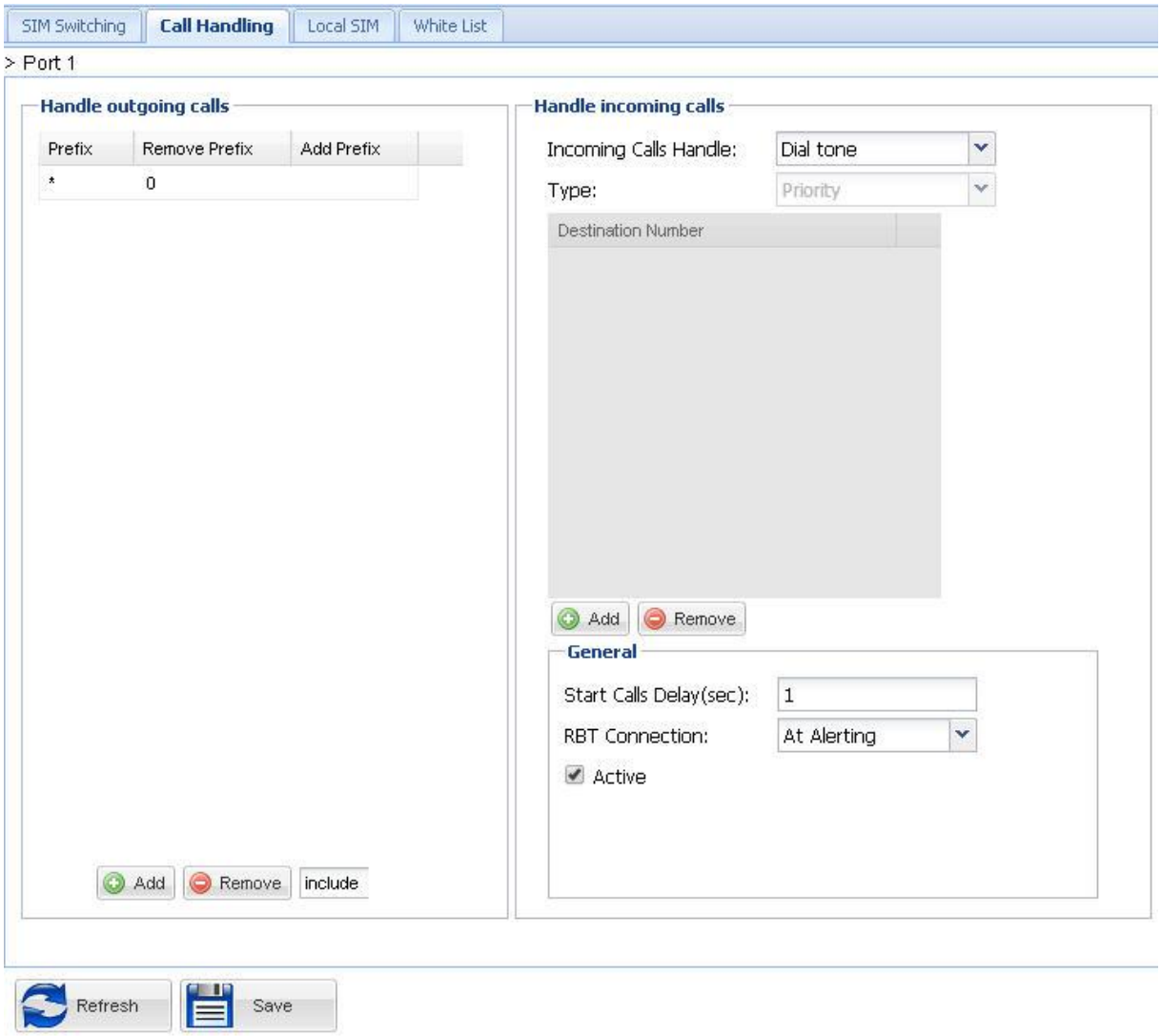
Each port can have a list of defined prefixes. When a number is dialed, the Gateway checks the prefix table and routes the call to a port according to the dialed prefix. The first matched prefix on the list is selected. 200 prefixes can be configured for each port.

If more than one port has a matching prefix, the Gateway creates a prefix group of these ports and divides calls with this prefix amongst the group.

***To manage call prefixes:***

1) From the Main Toolbar, click **Cellular**.
2) Select a port from the list .

3) Select the **Call Handling** tab. A prefix table for the selected port is displayed.




4) Enter the prefixes you want to add to this port in the table.
There are these two rules:
   - The default prefix is ***.** If the prefix of a port is *****, then all the calls that do not match a prefix in another port are routed through this port.
   - If two or more ports have the same prefix then the Gateway will divide the calls between the ports.

5) (Optional) You can modify the dialing number received from the SIP which the Gateway uses to dial out by using the following parameters:
   - **Remove Prefix** - Select how many digits to remove from the beginning of the dialed number.
   - **Add Prefix** - Enter the digits to be added at the beginning of the number.

6) In **Table Mode** select one of the following options:
   - **Include** - to only call the prefixes that included in the table
   - **Exclude** - to only call the prefixes that are excluded from the table

7) (Optional) In the **General** section you can configure the following settings:
   - **Active** - This enables outgoing calls from the selected port.
   - **Start Calls Delay** - This value in seconds is the delay time after registration until the start of calls.
   - **RBT Connection** - This defines when the voice from the called party is connected. There are three options:

- **At Alerting** - (default) From **Alerting** the called party
- **At Ringing** - From **Ringing** of the called party
- **At Connect** - From **Connect** of the called party

8) Press **Save.**

### 4.4.2. HANDLING INCOMING CALLS

***To handle incoming calls:***

1) From the Main Toolbar, click **Cellular**.
2) Select a port from the list .
3) Select the **Call Handling** tab. A prefix table for the selected port is displayed.
4) In **Incoming Calls Handle** select the operation mode for each port:
   - **Dial Tone** - All calls that come to this port receive a dial tone when calling any other port.
   - **Blocked** - All calls that come to this port are blocked. The caller hears a busy signal.
   - **Destination Number** - All calls that come to this port are automatically routed to a number according to the **Incoming Calls Destination** mode.
5) Click **Save**.

#### 4.4.2.1. AUTOMATIC ROUTING

This section describes how to configure the ports to automatically route incoming calls to predefined destination numbers.

***To route incoming calls to predefined numbers:***

1) From the Main Toolbar, click **Cellular**.
2) Select a port from the list .
3) Select the **Call Handling** tab. A prefix table for the selected port is displayed.
4) In **Incoming Calls Handle**, select **Destination Num**.
5) In **Incoming Calls Destination**, in **Type**, select one of the following options:
   - **Fixed** - All incoming calls to this port are routed to one predefined number (Num1).
   - **Priority** - All incoming calls to this port are routed to first number on the list. If the number is busy/ no answer (No Reply, Timeout) / doesn't exist, the call is routed to the next number on the list, until there is an answer.
   - **Cyclic** - The same as in Priority mode, except that each call begins with the next number on the list.
6) Click **Save**.

Note: The Host port **Destination Num** is not active. To automatically route the calls from the Host, set up routing in the SIP port for both SIP and Hosts.

## 4.5. CELLULAR OUTGOING CALL CONFIGURATIONS

To receive calls from a SIP and sending the calls to the cellular.

There are two options:

- Receiving calls from an IP PBX or SIP Server- see ***SIP Configuration*** on page 13
- Receiving calls from a SIP phone that is registered in the internal SIP Server - see ***Configuring the Internal SIP Server*** on page 24.

### 4.5.1. IP RESTRICTIONS

You can define the range of SIP IP addresses which the Gateway is allowed to receive calls from. When the IP address is restricted, all the messages from that IP will be blocked. You will not be able to call from that SIP or to register the SIP.

- ***To restrict the SIP IP address range:***

1) On the Main Toolbar, click **VoIP**.
2) Select **SIP Server**
3) Select the **IP Restrictions** tab.
   A window appears with two restrictions tables:
   - **Enable IPs**
   - **Deny IPs**
4) Define the SIP IP Address range according to the following rules:
   - Enable IPs and Deny IPs are not defined - All IPs are allowed
   - Only Enable IPs is defined - The IPs in the defined range are allowed and all other IPs are denied
   - Only Deny IPs is defined - The IPs in the defined range are denied and all other IPs are allowed
   - Enable IPs and Deny IPs is defined - The IPs in the Enable IPs range are all allowed with the exception of the IPs in the Deny IPs range

Note: The table is for a range of addresses. If you need to block only one IP, define the start and the end of the range to the same IP address.

5) Click **Save**.

## 4.6. CELLULAR INCOMING CALL CONFIGURATIONS

This section describes how to send calls to SIP.

There are two options:

- Sending calls to an IP PBX or SIP Server

- Sending calls to a SIP phone that is registered in the internal SIP Server

### 4.6.1. CALLING TO AN IP PBX

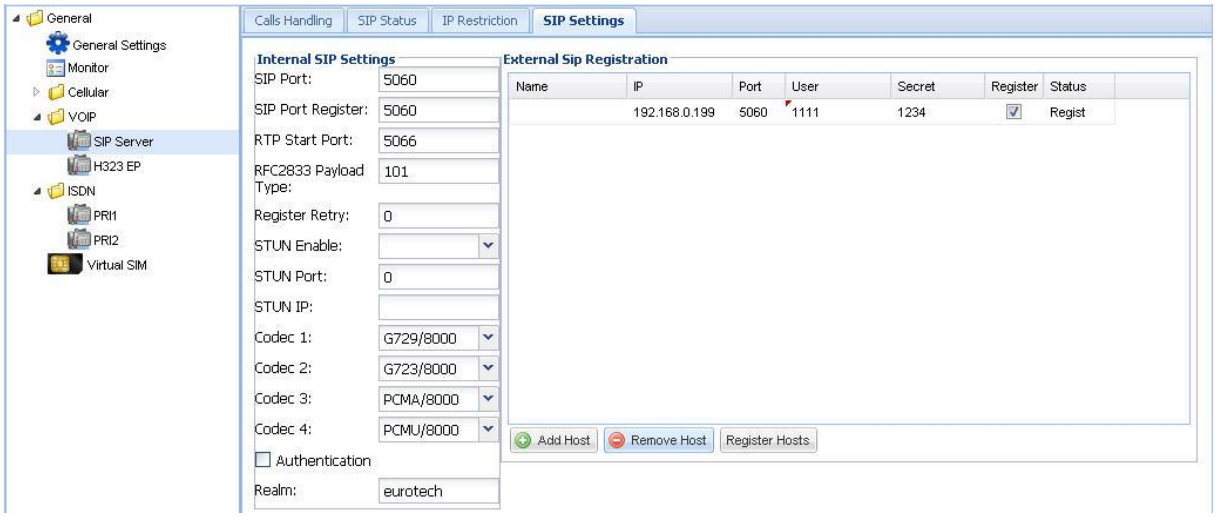
To call from the Gateway to IP PBX or any SIP Server, you have two options:

- sending the call with registration
- sending the call without registration

To send a call you must first define a Host in the Gateway. A Host is the SIP account which the Gateway sends the call to.

- ***To add a Host:***

1) Receive a SIP account from the external SIP Server.
2) On the Main Toolbar, click **VoIP**.
3) Select the **SIP Settings** tab.
4) In the **External SIP Registration** section of the window,
5) Click **Add Host,** enter the following information:
   - **Name** - define a name for this host connection
   - **IP Address** - the SIP Server IP address or DNS name
   - **Port** - the number of the SIP Server port (the default is 5060)
   - **User** - the user name
   - **Secret** - the authentication password of the SIP account
   - **Register** - by checking this box the Gateway sends calls with registration
6) Click **Save**.
7) Click **Register Hosts** to register the host in the external SIP Server.
8) After a few seconds, click **Refresh**. If the registration succeeded, the Status will show **Reg**. If registration failed, it will show **Not Reg**.




9) Once the host is registered, you can define a prefix for the external SIP Server. See ***Call Handling*** on page 27.

**The following is an example of how to call from a mobile phone through the Gateway to an extension in the IP PBX:**

1) On the Main Toolbar, click **Cellular**.
2) From the **Sip Clients**, select the Host.
3) Configure the prefix of the host to the prefix of the PBX extensions (i.e. if all the PBX extensions start with the digit 1, then the prefix of the host will be 1).
4) In **Remove Prefix**, enter 0.
5) Dial the number of the SIM card in port 1. You should hear a dial tone.
6) Dial the PBX extension number.

The Gateway recognizes the prefix of the Host (i.e. 1) and the call is routed to the IP PBX.

#### 4.6.1.1. AUTOMATIC ROUTING CALLS FROM CELLULAR TO AN IP PBX

This section describes how to configure the cellular ports to automatically route incoming calls to an IP PBX.

To route incoming calls to an IP PBX there are 3 steps:

***Step 1 - adding a new Host:***

Add a new host in the Hosts table. See ***To add a Host*** in page 31.

***Step 2 - Set a prefix to the new Host:***

Enter in the host prefix table the number to call in the IP PBX. See ***To Manage Call Prefixes*** in page 27.

***Step 3 - Set the port to route incoming calls to the IP PBX number:***

1) From the Main Toolbar, click **Cellular**.
2) Select a port from the list on the left.
3) Select the **Call Handling** tab. A prefix table for the selected port is displayed.
4) In Incoming Calls Handle, select Destination Num.
5) In **Type** select **Fixed**.
6) In **Num1** enter the number to call in the IP PBX.
7) Click **Save**.

### 4.6.2. CALLING TO A SIP PHONE

Once you have registered the SIP phone (see ***Basic Configuration*** on page 11), you send calls to that SIP phone.

Each SIP phone remains registered in the internal SIP Server for one hour.

- ***The following is an example of how to call a SIP phone:***

1) On the Main Toolbar, click **VoIP.**
2) Select the **SIP Clients**.
   Select the **Call Handling** tab.

The default **Prefix** is 9.
The default **Remove Prefix** is 1.

3) Define the prefix according to your needs.

Note: The VoIP prefix must be different than the cellular and Host ports prefix to avoid losing calls.

4) Dial the number of the SIM card in port 1. You should hear a dial tone.
5) Dial the VoIP prefix and the SIP phone number.

The call is routed to the SIP phone.

## 4.7. CONFIGURING THE SIM SERVER

The Gateway can connect to SIMs in external SIM Servers.

When the Gateway needs to register SIMs from the SIM Server, it connects to the SIM Server with port 2008 and requests the data of the SIM. The duration of the connection between the Gateway and the SIM Server is limited to the time that the Gateway is registered with a SIM from the SIM Server.

Limitations:

- A Gateway can connect to the SIMs of 20 SIM Servers.
- The SIM Server can connect to 100 Gateways.
- The SIM Server can connect to 80 ports using 80 SIMs simultaneously.

When the SIM Server is operating behind a firewall, ports 2008 and 2009 must be open.

The following sections describe how to perform advanced configurations on the SIM Server, including:

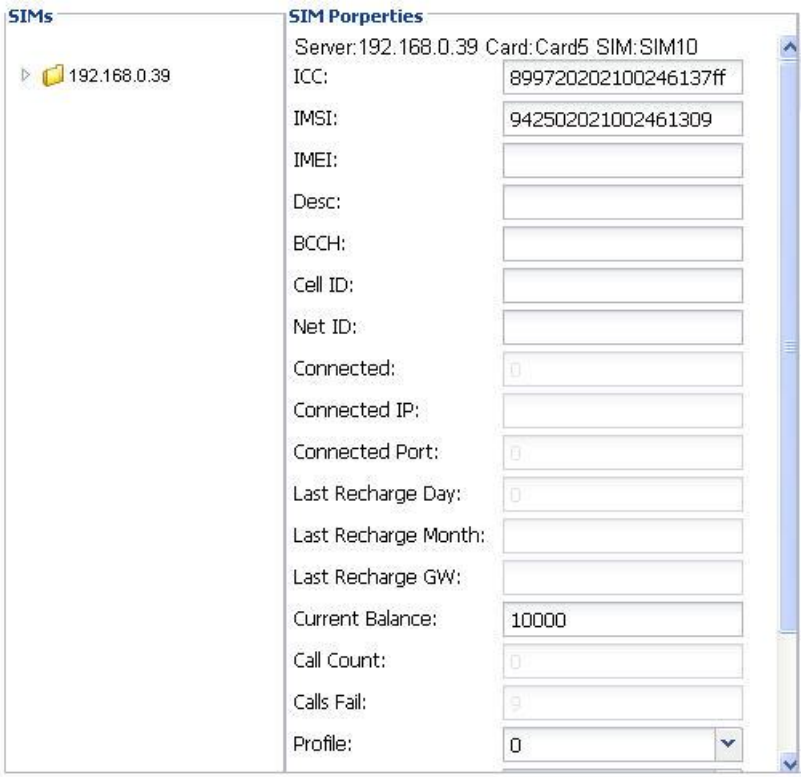
- ***Connecting the GUI Management*** on page 33
- ***Defining the General Settings*** on page 34
- ***Defining SIM Settings*** on page 35
- ***Assigning a SIM to Work in the Gateway*** on page 38
- ***Blocking SIMs*** on page 43
- ***Setting the Auto Balance Check*** on page 44
- ***Monitoring the Balance of SIM*** on page 47
- ***Setting the Auto Balance Recharge*** on page 47
- ***Configuring Test Call Profile*** on page 49
- ***Configuring Test SMS*** on page 50

### 4.7.1. CONNECTING THE GUI MANAGEMENT

- ***To connect the GUI Management to a SIM Server:***

1) On the Main Toolbar, click **Virtual Sim**.
2) Select the **SIM Servers** tab.
3) Click **Add Server**

4) Enter the IP address of the SIM you want to view. (The default port for a VoIP²ALL SIM Server is 2009.)
5) Check the **OnLine** check box.
6) Click **Save**.
7) Click **Synchronize**. In **SIMs,** the following list appears:

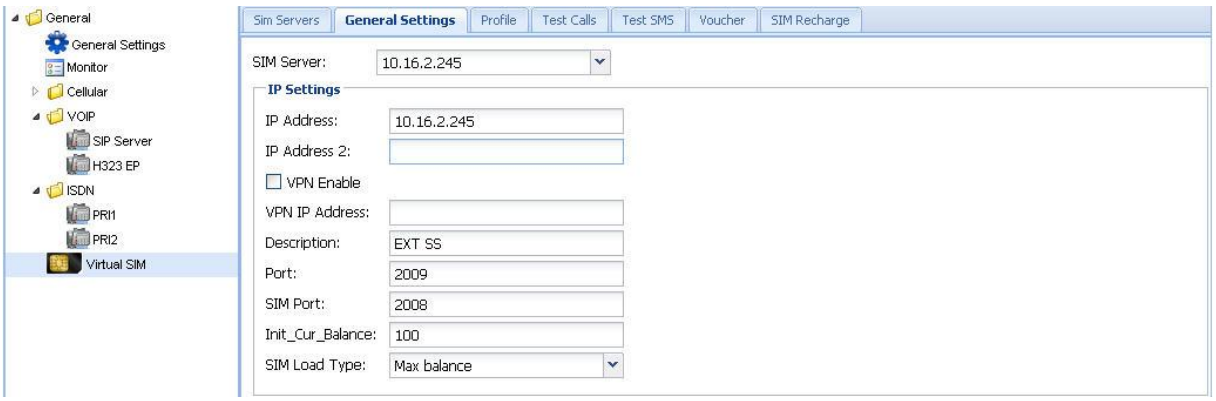



All of the SIMs from the SIM Servers are displayed.

## 4.7.2. DEFINING THE GENERAL SETTINGS

***To define the general settings of the SIM Server:***

1) On the Main Toolbar, click **Virtual SIM**.
2) Select the **General** tab.



3) Configure the following parameters as needed:
   - **IP Address** - The IP Address of the SIM Server.
   - **IP Address2** - The secondary IP Address. See ***Using the Secondary IP*** on page 42.
   - **Description** - Define a name for the SIM Server.
   - **Port** - The port to access the SIM Server, 2009.
   - **SIM Port** - The port to access the SIMs data, 2008.
   - **Initial Current Balance** - The **Current Balance** of a new SIM is set to this amount.
4) Click **Save**.

### 4.7.3. DEFINING SIM SETTINGS

The SIM Servers Setting list displays all of the SIMs in the SIM Server.

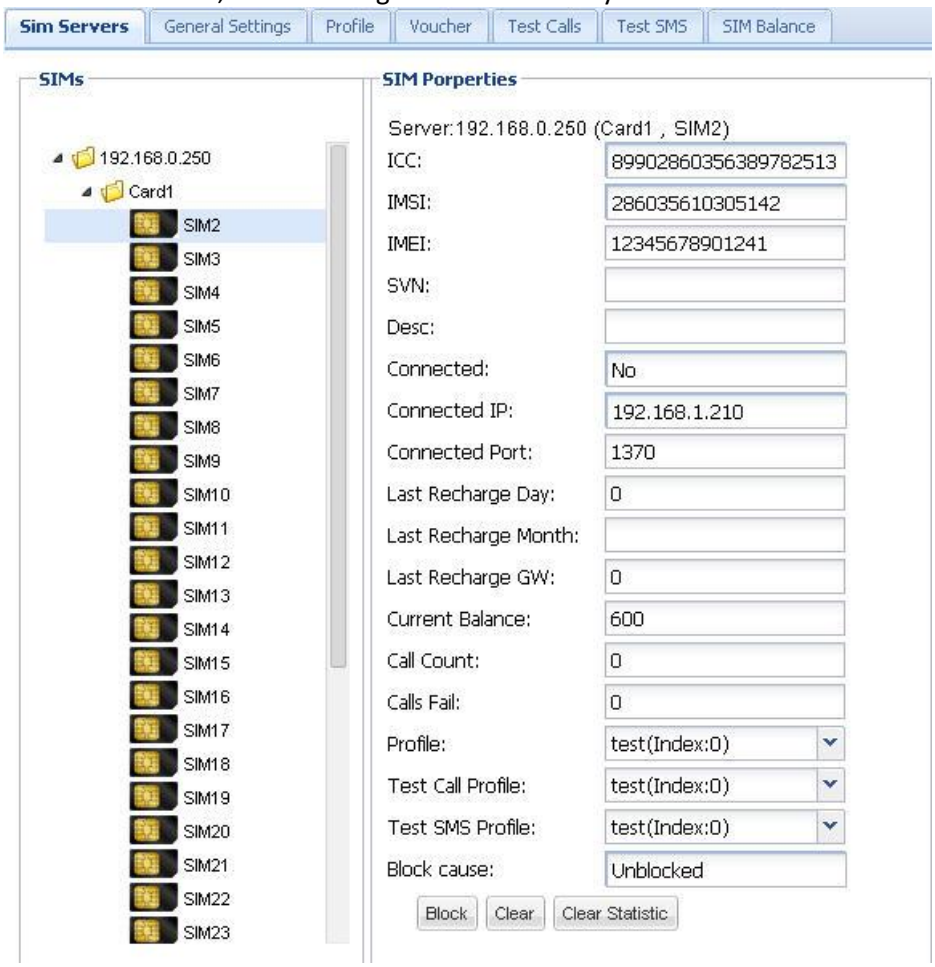
The list is arranged according SIM Server cards and the SIMs from 1 to 32 according to their location on the card. Only cards and SIMs that are in the SIM Server appear in the list.

The settings you define here are saved in the SIM Server and applied when the SIM is registered in the cellular network and begins to work.

- ***To define SIM settings:***

1) In **SIM Servers**, click the arrow sign next to the card. The card's SIMs are displayed.

2) From the SIMs list, click the + sign next to the SIM you want to define.




In the table the following SIM information appears:

- **ICC** - The **International Code Council** number of the SIM.
- **IMSI** - The **International Mobile Subscriber Identity** number of the SIM.
- **IMEI** - closed by default
- **Connected** - The status of the SIM. The status show 1 if the SIM is currently in use by the Gateway with the IP address shown in **Connected IP**.
- **Connected IP** - The IP address of the Gateway that is using the SIM.
- **Connected Port** - The port in the Gateway the SIM Server is connected to.
- **Call Count** - The amount of calls this SIM made last time he was connected.
- **Call failed** - The amount of consecutive failed calls this SIM made last time he was connected.
- **Call Count** - The total number of calls executed.
- **Call Fail** - The number of calls that failed.
- **Blocked Cause** - Indicates if the SIM is blocked and what is the block cause. (See ***Blocking SIMs*** on page 43.)

3) Configure the following SIM parameters as needed:

- **Desc** - Enter a name for this SIM.
- **Current Balance** - The total amount of units to be used in Call Duration mode.

- **Recharge Value** - The number of units to recharge the Current Balance at the Top Up Day.
- **Profile** - A group of parameters of the SIM used when registering. The default profile is 0, for regular operation. For advanced configuration, see ***Configuring a Profile*** on page 37.
- **Test Call Profile** - A group of parameters of the SIM used when making Test calls. The default profile is 0, disabled. To enable, see ***Configuring Test Call Profile*** on page 49.
- **Test SMS Profile** - A group of parameters of the SIM used when making Test SMS. The default profile is 0, disabled. To enable, see ***Configuring Test SMS*** on page 50.
- **Block Options** - Allows you to Block or Unblock the SIM. (See ***Blocking SIMs*** on page 43.)

4) Click **Save Card**.

#### 4.7.3.1. CONFIGURING A PROFILE

A Profile is a predefined group of parameters that a SIM uses when activated. You can define up to 10 different profiles. Each SIM uses one of the predefined profiles.

Using profiles you can easily define parameters for a group of SIMs.

- ***To define a profile:***

1) On the Main Toolbar, click **Virtual SIM**.
2) Select the **Profile** tab.
3) In **Profile**, select a profile from the list. (0 - 9).
4) Define the following parameters:

| PARAMETER | DESCRIPTION |
|---|---|
| **Index** | The number of the profile (view only). |
| **Name** | The name of the profile. |
| **MCC** | This locks the country code of the SIM cellular network.<br>The default is 0, which disables the lock. |
| **MNC** | This locks the network code of the SIM cellular network.<br>The SIM only tries to connect to this network. The default is 0, which disables the lock.<br>Note: Parameters MCC and MNC must be defined together. |
| **PIN Code** | The PIN Code for the SIM when it is PIN Code protected.<br>The PIN code is a 4 digit number. |
| **CLIR** | Show or hide the SIM number in calls to the cellular.<br>The options are:<br>▸ By Network - Uses the cellular network setting.<br>▸ Hide - Hides the caller ID (when the cellular network support is sending private calls).<br>▸ Show - Shows the caller ID. |

| | |
|---|---|
| **SMSC Number** | The number of the SMS service . Leave empty to use the SIM default SMSC number. |
| **BCCH** | Locking the port with the SIM on a specific BCCH.<br>For details, see ***BCCH Configuration*** on page 58. |
| **SIM Prepaid** | Reading and charging the balance of prepaid SIM cards.<br>You can configure this parameter to automatically request the balance and recharge the SIM. |
| **Balance Request** | Setup the format of the balance request messages and the time to activate it.<br>For details, see ***Setting the Auto balance Check*** on page 44. |
| **Current Balance Answer** | Setup the format of the balance answer. |
| **Balance Recharge** | Setup the format of the balance recharge message and the time to activate it.<br>For details, see ***Setting the Auto balance Recharge*** on page 47. |
| **Call Duration** | Setup the Call Duration parameters.<br>For details, see Defining the SIM to work by Call Duration on page 41. |
| **Top Up Day** | Setup the day to recharge the Current Balance with the Recharge Value amount.<br>For details, see Defining the SIM to work by Call Duration on page 41. |

5) Click **Save**.

#### 4.7.3.2. ASSIGNING A PROFILE TO A SIM

- ***To assign a profile to a SIM:***

1) On the Main Toolbar, click **Virtual SIM**.
2) Select the **SIM Servers** tab.
3) Click **Synchronize**.
4) From the **SIM Servers List**, click the + sign next to the SIM in the list.
5) In the **Profile** parameter, select a number from the profile list you want to assign to this SIM.
6) Click **Save Setting**.
7) Click **Save**.

### 4.7.4. ASSIGNING A SIM TO WORK IN THE GATEWAY

After configuring the SIM parameters, define when and in which port the SIM will work.

There are two methods for determining when the SIM will work:

- **Time Table** - The SIM is replaced at the end of its defined time in the Time Table. In this mode you set up a Time Table and define which SIM will work in which hour.

- **Call Duration** - The SIMs are replaced when they end their defined calling minutes. In this mode you define a list of SIMs in the table. For each SIM in the list you define the amount of calling units to be used. Each SIM will work for the defined calling minutes and then be replaced with the next SIM on the list.

Note: After any change that has been defined in the SIM Settings or profiles, you must re-define the Time Tables or reset the Gateway for the changes to take effect.

#### 4.7.4.1. DEFINING A SIM TO WORK BY TIME TABLE

- ***To define a Time Table:***

1) On the Main Toolbar, click **Cellular**.
2) In the ports list , select **General**.
3) In SIM Registration Mode, select **All SIM work by time table.**
4) , select a port from the ports list.
5) From the **SIM List**, select a SIM.
6) In **Type**, select the type of schedule you want to define from the following options:
   - **Monthly** - The table will show all the days of the month.
   - **Weekly** - The table will show all the days of the week.
7) In **Swapping Type**, select one of the following options:
   - **Time Table** - The SIM is replaced at the end of its defined time in the Time Table. In this mode you set up a Time Table and define which SIM will work in which hour.
   - **Call Duration** - The SIMs are replaced when they end their defined calling minutes. In this mode you define a list of SIMs in the table. For each SIM in the list you define the amount of calling units to be used. Each SIM will work for the defined calling minutes and then be replaced with the next SIM on the list.
   - **Manual Mode** - This gives you the option of manually connecting a SIM immediately. This is recommended for temporary use only, generally by support in the debug process.
8) In the Time Table, define the hour and day for a SIM to register.
   In the time slot you can see the information of the SIM in this format: C1_S1_192.168.0.48
   - C1 - the SIM Server card number in the SIM server
   - S1 - the SIM socket number in the card
   - 192.168.0.48 - the IP Address of the SIM Server
9) You can define other SIMs to work in the Time Table by repeating the previous step.

Note: There is a SIM swapping limitation of 400 time slots per port.

10) Click **Save**.
    At the defined time, the SIMs in the Time Table will register in the cellular network.

Note: Resetting the gateway before 10 minutes has passed will result the changes in the time table not to be saved.

### 4.7.4.2. DEFINING A SIM TO WORK BY CALL DURATION

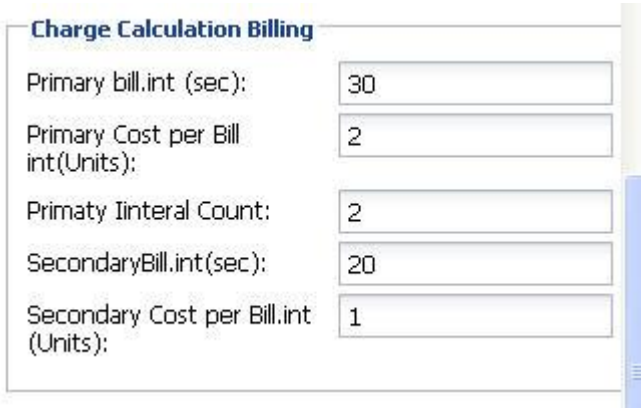
In the Call Duration mode, each SIM works for a defined number of call minutes.

At the beginning of the day, the Gateway registers a SIM from the list and then counts down the number of units defined for that SIM until it reaches 0.

The Gateway then registers the next SIM from the list. This process continues until all of the SIMs on the list have finished their defined time units.

The Gateway resets the time unit count to the original definitions at the beginning of every month or week, depending on the **Type** selected in the **Time Table**.

#### The calculation of the units per interval




The Gateway calculates the call duration by intervals. An interval is a minimum billing duration. When making a call shorter than 1 interval, you will be charged the entire interval cost.

You must define the cost and time duration of the intervals.

Calculations are as follows (See the parameters in the figure above.):

- At the beginning of the call the Gateway counts the units according to the **Primary bill interval.**
- The number of units for each interval is defined in **Primary Cost per billing interval.**
- This **Primary bill interval** is repeated according to the number of times defined in **Primary Interval Count**.
- The rest of the call uses the **Secondary Bill Interval**.

For example:

For a call of 1 minute and 59 seconds, the unit calculations are:

- From the beginning of the call, two 30 second intervals (**Primary bill. int**) according to the **Primary Interval Count** for a total of 1 minute.
- Each interval is 2 units according to the **Primary Cost per bill int.** definition.
  Therefore, the charge calculation is: 2 intervals of 2 units per interval = 4 units
- The remainder of the call takes 3 intervals of the **Secondary Bill Interval** for 59 secs.
  Therefore, the charge calculation is: 3 intervals of 1 unit per interval = 3 units.

The total amount of units for this call will be 4 + 3 = 7 units.

### Current Balance

The Current Balance is the number of units the SIM has left to use.

At the end of each call the unit count is updated. Once the Current Balance of a SIM has reached 0, you will not be able to work again with that SIM until you set a new balance.

There are two common methods of counting units:

- seconds
- minutes

If you are working by seconds and you want to limit the Current Balance to a specific number of minutes, the Current Balance (units) must be the number minutes X 60.

***To configure a SIM from the SIM Server to work in Call Duration:***

1) On the Main Toolbar, click **Virtual SIM**.
2) Select the **Profile** tab.
3) In **Profile**, select a profile.
4) Click **Call Duration**.
5) In **Charge Calculation Billing** define the following parameters:
   - Primary Bill Interval
   - Primary Cost per Bill Int
   - Primary Interval Count
   - Secondary Bill Interval
   - Secondary Cost per Bill Int
6) Click **Save.**
7) Assign the profile to a SIM. See ***Assigning a Profile to a SIM*** on page 38.
8) Define the Current Balance.
9) Click **Save Card.**
10) Define the **Call Duration** list.

***To define the Call Duration SIM list:***

1) On the Main Toolbar, click **Cellular**.
2) From the ports list , select a port.
3) In **Type**, select a Time Table type.
4) In **Swapping Type**, select **Call duration**.
5) In **SIM List**, select a SIM.
6) In **Call Duration** enter the amount of units you want to limit the SIM to that day.
7) Select the day you want the SIM to work or Week/Month to work all days.
8) Click **Add.**
9) In the **Time Table**, you can see the information of the SIM you choosen to work.
10) To remove line from the table, mark the line and click **Remove One**.
11) Click **Save**.

12) Select the **General** tab.

13) In **Next SIM to Load Order,** define how the Gateway selects the next SIM when the current SIM has finished its work.
Select one of the following:

- **Randomly** - The SIM to work is selected randomly.
- **Max Balance to Min Balance** - The SIM with the highest balance.
- **Min Balance to Max Balance** - The SIM with the lowest balance.
- **First to Last** - The next available SIM on the list.
- **Last to First** - The last available SIM on the list.

14) Click **Save**.

### Swapping SIMS in Call Duration every few calls

In Call Duration mode you can define the port to swap the SIM every few calls before reaching the daily limit.

Each time the SIM is activated, the Gateway selects a random number within the range defined in the Max and Min Call Count parameters.

This is the amount of calls the SIM makes during its activation time before being replaced by the next SIM on the list.

***To swap SIMs:***

1) From the Main Toolbar, click **Virtual SIMs**.
2) Select the **Profile** tab.
3) Select a profile.
4) Click **Call Duration**.
5) Define the following parameters:
   - **Max number of calls per rotation**
   - **Min number of calls per rotation**
6) Click **Save**.
7) Assign the profile to a SIM. See ***Assigning a Profile to a SIM*** on page 38.
8) Define the Call Duration SIM list. See above.

### Recharge Value

The Recharge Value is the number of units to recharge the Current Balance.

At the Top Up Day the Current Balance will be set with the Recharge Value amount.

By default the Top Up Day is set to 0, the Current Balance will not be recharged.

## 4.7.4.3. USING THE SECONDARY IP

If the SIM Server is working with a private IP address behind NAT, and the Gateway accesses the SIM Server from the public IP, you need to configure the secondary IP so the Gateway can contact the SIM Server.

- ***To configure the Secondary IP:***

1) On the Main Toolbar, click **Virtual SIM**.
2) Click **Synchronize**.
3) Select the **General** tab.
4) In the SIM Server list, select the SIM Server you want to add a secondary IP
5) In **IP Address2**, enter the external IP address of the SIM Server.
6) Click **Save Setting**.
7) On the Main Toolbar, click **Cellular**.
8) From the ports list , select a port.
9) Enable the **Secondary IP** in the Time Table.
10) Assign the SIM to work in the Gateway. See ***Defining a SIM to Work by Time Table*** on page 39 or ***Defining a SIM to Work by Call Duration*** on page 40.

Note: Do not forget to configure the NAT of your LAN to forward ports 2008 and 2009 to the SIM Server IP address.

### 4.7.5. BLOCKING SIMS

The VoIP²ALL has a SIM blocking feature to decrease the number of unsuccessful calls from a SIM.

When the SIM is marked **Blocked** in the SIM Server, it is unregistered from the port in the Gateway and cannot be used until you manually unblock the SIM.

This improves the ASR by blocking SIMs that have a low call success rate.

Note: This feature is only available when using Call Duration mode.

There are four reasons that the Gateway blocks a SIM:

- **Reason 1** - The SIM is blocked manually.
- **Reason 2 -** The SIM has made the number of consecutive unsuccessful calls defined in **Blocked Threshold.** See ***Network Announcement Message Detection*** on page 55.
- **Reason 3 -** The SIM has made the number of consecutive calls that were detected as "message announcement" defined in **Number of Detection.** See ***Network Announcement Message Detection*** on page 55.
- **Reason 4 -** The SIM has tried to register unsuccessfully and reached the **SIM Registration Time Limit**.

The status appears in **Blocked Cause** using the following codes:

- **Unblocked** - The SIM is not blocked.
- **Blocked (Manually)** - The SIM is blocked by **Reason 1**
- **Blocked (Call Failed) -** The SIM is blocked by **Reason 2**
- **Blocked (Net. Message)-** The SIM is blocked by **Reason 3**
- **Blocked (Reg. Timeout) -** The SIM is blocked by **Reason 4**

***To configure the General Parameters:***

1) On the Main Toolbar, click **Cellular**.
2) From the ports list, select **SIM Blocking**.
3) Define the following parameters:
   - **Consecutive failed Calls** - The Gateway blocks the SIM when the port has reached the defined number of consecutive failed calls.
   - **SIM registration time limit** - SIM has not registered successfully within this time periods (seconds).
4) Click **Save**.

***To block a SIM manually:***

1) On the Main Toolbar, click **Virtual SIM**.
2) Select **SIM Servers** tab.
3) Click **Synchronize.**
4) Click the **+** next to the Card.
5) In **Block Options**, click **Block**.
6) Click **Save Card**.
   The SIM is blocked when it is finished working, (i.e. either at the end of a defined Time Table or when the port is reset).

***To unblock a SIM:***

1) On the Main Toolbar, click **Virtual SIM**.
2) Select **SIM Servers** tab.
3) Click **Synchronize.**.
4) Click the **+** next to the Card.
5) In **Block Options**, click **Clear**.
6) Click **Save.**
   The SIM is unblocked immediately.

Note: You can view the blocked SIM in one list at the **Status** colom of the **SIM Balance** tab.

### 4.7.6. SETTING THE AUTO BALANCE CHECK

The SIM balance is the amount of money remaining on the SIM.

There are two methods of checking the balance:

- **Manually** - Using the **USSD Managment** screen. See ***Balance Check*** on page 53.
- **Automatically** - Using the profile, the Gateway checks the balance automatically at defined periods.

***To check the SIM balance automatically by profile:***

1) On the Main Toolbar, click **Virtual SIM**.
2) Select the **Profile** tab.

3) In **Profile**, select a profile from the list. (0 - 9).
4) Click + next to the **SIM Prepaid** parameter.
5) Select **Active**.
6) Click + next to **Balance Request**.
7) Define the parameters in the following table:

| PARAMETER | DESCRIPTION |
|---|---|
| **Type** | The method of sending the balance request. Options include:<br>▸ USSD<br>▸ SMS<br>▸ DTMF |
| **SC Number** | The number to send the balance request. (Not relevant with USSD.) |
| **Message** | The balance request message. |
| **Activation Type** | Automatically send the balance request. There are three options:<br>▸ SIM Activation - The balance request is sent one time after the SIM has registered in the cellular network.<br>▸ Calls - The balance request is sent every time the number of calls that is defined in **Activation Threshold.**<br>▸ Minutes - The balance request is sent every time the number of minutes that is defined in **Activation Threshold.** |

8) Click + next to **Current Balance Answer**.
9) Define the parameters in the following table:

| PARAMETER | DESCRIPTION |
|---|---|
| **USSD** | When active, the Gateway will expect the balance answer to be in USSD. |
| **SMS** | When active, the Gateway will expect the balance answer to be in SMS. |

| | |
|---|---|
| **Parse String** | The Gateway will expect the balance, in the local currency, to be in this format.<br>To identify the balance in the answer string, you must set the string that appears before the balance with the number format in **Parse String**.<br>The number format options are:<br>▸ [0-9]*\.[0-9]* – for number in format **Number.Number** , for example **150.25** (balance = 15025).<br>▸ [0-9]*[#-.][0-9]* – for number in format **Number,Number** , for example **150,25** (balance = 15025).<br>[0-9]*– for number in format of only **Number**, for example **150** (balance = 150). |
| **Synchronize with SIM Balance** | When defined as 1 (enabled), the answer updates the **Current Balance**. |
| **Synchronize multiplier** | The answer is multiplied by the number defined in this parameter.<br>The **Current Balance** is updated with the multiplied answer. This converts the currency amounts to defined unit amounts.<br>For example: If $1 = 5 billing intervals and 1 billing intervals = 1 unit, define the multiplier as 5, then an answer of $2 will equal 10 units. |

10) Click **Save**.

**Example: The following is how to set the profile for the current balance to be updated every 10 calls with the SIM real balance from cellular network using USSD command:**

1) The **Balance Request** is set as follows:

| | |
|---|---|
| Prepaid SIM | Active |
| ⊟ Balance Request | |
| Type | USSD |
| SC Number | |
| Message | *101# |
| Send Request | By Calls |
| Activation Threshold | 10 |

2) Check the balance of the SIM. See ***To check the SIM balance manually*** on page 46.

3) If the balance answer is "The balance of the SIM is 150.25 euro.". the balance of the SIM is 150.25 euro. In this case, the **Parse String** should be set to: **SIM is [0-9]*\.[0-9]*** .

4) The **Balance Reply** is set as follows:

| | |
|---|---|
| ⊟ Balance Reply | |
| USSD | Active |
| SMS | Not Active |
| Value Format | SIM is [0-9]*\.[0-9]* |
| Synchronize with Current Balance | 1 |
| Currency/Units Multiplier | 1 |

The **Current Balance** will be updated every 10 calls with the balance from the network including the numbers after the decimal point.

In the example above the balance was 150.25 euro the **Current Balance** will show as 15025

Note: The **Current Balance** is a whole number without fractions.

### 4.7.7. MONITORING THE BALANCE OF SIM

When the SIM is registered in any port, you can check the balance by profile.

The SIM Server saves Current Balance updated by the last balance check of each SIM.

- ***To monitor the balance of all SIMs:***

1) On the Main Toolbar, click **Virtual SIM**.
2) Select the **SIM Servers** tab.
3) Click **Synchronize**.
4) Select the **SIM Balance** tab.
5) Click + next to a Card.
   The **Current Balance** for all SIMs in the card are displayed.

### 4.7.8. SETTING THE AUTO BALANCE RECHARGE

The SIM balance can be recharged using the following procedure.

There are two methods of recharging the balance:

- **Manually** - Using the **USSD Managment** screen. See ***Balance Check*** on page 53.
- **Automatically -** Using the profile, the Gateway recharges the balance automatically at defined times.

- ***To recharge the SIM balance automatically by profile:***

1) On the Main Toolbar, click **Virtual SIM**.
2) Select the **Profile** tab.
3) In **Profile**, select a profile from the list. (0 - 9).
4) Click + next to the **SIM Prepaid** parameter.
5) Select **Active**.
6) Click + next to **Balance Recharge**.
7) Define the parameters in the following table:

| PARAMETER | DESCRIPTION |
|---|---|
| **Type** | The method of sending the recharge request. Options include:<br>▸ USSD<br>▸ SMS<br>▸ DTMF |

| | |
|---|---|
| **SC Number** | The number to send the balance request. (Not relevant with USSD.) |
| **Message** | The recharge request message.<br>The recharge message is in this format: **msg%s**<br>▸ **msg** - the recharge message<br>▸ **%s** - the place to insert the voucher number (See below) The Gateway takes the first unused voucher and inserts it in place of the **%s**. The resulting string is the recharge message.<br>When sending DTMF messages, you can add a pause in the DTMF dialing. **"p"** is a 1 second pause and **"P"** is a 10 second pause.<br>For example:<br>When **Type** is set to **DTMF**, **Message** is set to **1[%s]** and the voucher number is **0438888#p22055#P,** the Gateway calls the SC Number, then dials 10438888#, waits a short pause, dials 22055# waits a long pause and then disconnects the call. |
| **Accept Recharging** | Not is use. |
| **Minimum Balance** | The recharge request is sent when the Gateway detects that the balance of the SIM is below the **Minimum Balance** or when it is scheduled in **Activation type**. |
| **Activation type** | When to automatically send the recharge request. There are three options:<br>▸ **SIM Activation** - After the SIM is registered in the cellular network and an outgoing call was made.<br>▸ **Calls** - After the number of calls defined in **Activation Threshold**.<br>▸ **Minutes** - After the number of calling minutes defined in **Activation Threshold**. |

1) Click **Save**.

#### 4.7.8.1. CONFIGURING VOUCHERS

In the **Vouchers** tab you load the recharge vouchers for the SIMs.

A list of vouchers can be defined for each cellular network.

Each voucher contains the recharge key code and the status of the voucher.

- Key Code - The recharge key for this voucher is usually printed on the voucher card.
- Status - The current status of the voucher:
  - 0 - Not used.
  - 1 - Currently in use.
  - 2 - Used successfully.

- 3 - Used unsuccessfully.

The following is an example of a DTMF voucher number:

0123456#p01234#P

In this example, the recharge key code consists of two codes. After each code you need to send #. We added short pause (marked by p) between the codes and a long pause (marked by P) at the end.

***To add a new voucher:***

1) On the Main Toolbar, click **Virtual SIM**.
2) Select the **SIM Servers** tab.
3) Click **Syncronization**.
4) Select the **Profile** tab.
5) In **Profile**, select a profile.
6) In the **MCC** and **MNC** parameters, enter network and country code of the SIM.
7) Click **Save**.
8) Select the **Voucher** tab.
9) In the **Server** field, select a SIM Server to work with. The SIM Servers are listed by their IP address.
10) In the **MCC** field**,** select the country code of the profile.
11) In the **MNC** field, select the network code of the profile.
    In the list at the left, the current vouchers for this cellular network are displayed.
12) Click **Add Number**.
    A new voucher appears in the list.
13) In the **Num** field, enter the key code of the voucher.
14) Click **Save**.
15) Click **Refresh** to view the updated list. The new voucher has a default state of **Available**.

Note: After the voucher has been used, the state indicates if the voucher was used successfully.

***To remove the used vouchers:***

1) In the **Server** field, select a SIM Server to work with.
2) In the **MCC** field**,** select the country code of the profile.
3) In the **MNC** field, select the network code of the profile.
   In the list at the left, the current vouchers for this cellular network are displayed.
4) Click **Remove Used Vouchers**.

### 4.7.9. CONFIGURING TEST CALL PROFILE

Test Call is a function to randomly generate calls from the cellular ports to predefined destinations. The function can be used to test incoming calls to the cellular ports.

SIMs that use this profile will operate like any other SIM until **Start time**.

At **Start time** the port that uses this SIM will make calls randomly to one of the numbers in the **Test Calls** profile.

### *To configure the Test Call profile:*

1) On the Main Toolbar, click **Virtual SIM**.
2) Select **SIM Servers** tab.
3) Click **Synchronize**.
4) Select the **Test Call** tab.
5) In the **Profile** field, select a profile.
6) Click **Add**.
   In the list, **Destination (not Save)** appears.
7) Enter the number to send the test call to.
   You can add multiple numbers by repeating step 6 and 7.
8) Define the following parameters:
   - **Min/Max Call** - The minimum and maximum length of the calls. A call will last a random amount of seconds within this range.
   - **Min/Max Freq** - The minimum and maximum length of time between the calls. The time between calls is a random amount of seconds in this range.
   - **Start Time** - The time to start the calls. (i.e. hh:mm)
   - **End Time** - The time to stop the calls. (i.e. hh:mm)

Note: The end time must be after the start time as the period does not extend to the following day.

9) Click **Save.**

## 4.7.10. CONFIGURING TEST SMS

Test SMS is a function to randomly send SMS from the cellular ports to predefined destinations, allowing you to test incoming SMS to the cellular ports.

SIMs that use this profile will operate like any other SIM until **Start time**.

At **Start time** the port that uses this SIM will send SMS randomly to one of the numbers in the **Test SMS** profile using one of predefined messages.

### *To configure Test SMS profile:*

1) On the Main Toolbar, click **Virtual SIM**.
2) Select **SIM Servers** tab.
3) Click **Synchronize**.
4) Select the **Test SMS** tab.
5) In the **Profile** field, select profile.
6) Click **Add Number**.
   In the **Test SMS Profile** list, **Destination(not Save)** appears.
7) Enter the number to send the test call to.
   You can add multiple numbers by repeating step 6 and 7.

8) Click **Add Content**.
In the **Test SMS Profile** list, **Content(not Save)** appears.

9) Enter the message to send.
You can add multiple messages by repeating step 8 and 9.

10) Define the following parameters:

- **Min/Max Freq** - The minimum and maximum length of time between the messages. The time between messages is a random amount of seconds in this range.
- **Start Time** - The time to start the messages. (i.e. hh:mm)
- **End Time** - The time to stop the messages. (i.e. hh:mm)

Note: The end time must be after the start time as the period does not extend to the following day.

11) Click **Save.**

## 4.8. MODIFYING SYSTEM SETTINGS

This section describes how to modify the system's settings, including:

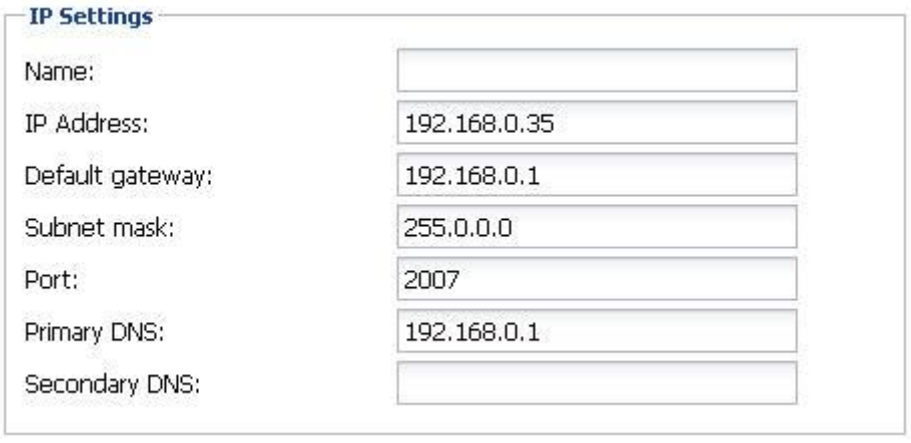

- ***IP Settings*** on page 51
- ***Dial Settings*** on page 52
- ***Changing the Password*** on page 52
- ***Resetting the Gateway*** on page 53


### 4.8.1. IP SETTINGS

- ***To configure the IP settings:***

1) On the Main Toolbar,

2) Click **General Settings**. The following window appears:




3) Define the following parameters:

- **IP Address** - The IP address of the Gateway. By default it is 10.16.2.245.
- **Default Gateway** - This parameter must be configured when working behind a NAT so that the Gateway can access the WAN.

- **Subnet Mask** - This parameter must be configured when working behind a NAT.
- **Port** - IP port of the VoIP²ALL. This is used for connecting to the PC management software. Default setting it is 2007.
- **DNS** - This parameter must be configured when working behind a NAT if you need to connect to an external SIP Server with a name and not an IP address. Configure the DNS parameter to the IP address of your DNS server.

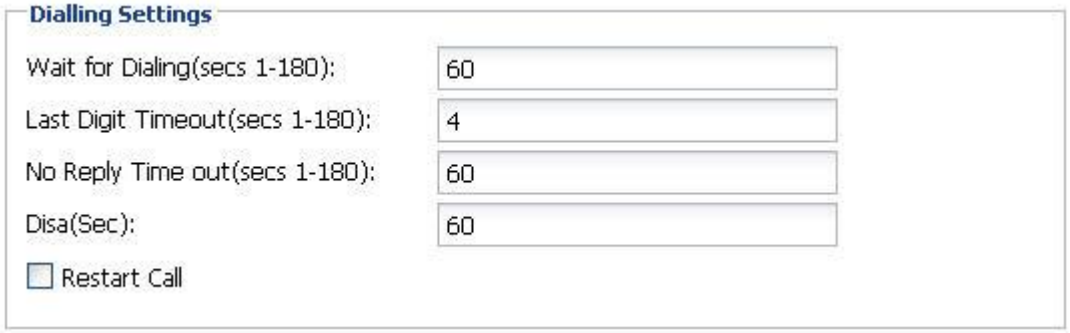
4) Click **Save**.

## 4.8.2. DIAL SETTINGS

The Dial Settings define the time intervals the Gateway uses when making calls.

***To configure the dial settings:***

1) On the Main Toolbar, click **General Settings**.
The following window appears:




2) In the **Dialling settings**.
3) Define the following parameters:
   - **Wait for Dialing** - The time, in seconds, from the start of the dial tone that the VoIP²ALL waits for the first digit to be dialed. After that time the VoIP²ALL closes the channel.
   - **Last Digit Timeout** - The time, in seconds, the VoIP²ALL waits to call the number after the last digit dialed.
   - **No Reply Timeout** - The number of seconds without an answer that the Gateway waits before determining no answer.
   - **DISA** - The number of seconds each DISA number stays in the memory.
   - **Restart Call** - When enabled, consecutive VoIP calls are allowed. Before the end of a call from the cellular to VoIP, press * to receive a dial tone which enables you to call another VoIP number.
4) Click **Save**.

## 4.8.3. CHANGING THE PASSWORD

A password is required to connect the Gateway to the web GUI.

By default the password is **admin**.

***To change the password:***

1) From the Main Toolbar, Click **System Settings**
2) Click **Change Password** tab
3) In **Password change**, enter your current password.
4) In **Current Password**, enter the current password.
5) In **New Password**, enter the new password.
6) In **Confirm Password**, enter again the new password.
7) Click **Change,** to save.

### 4.8.4. RESETTING THE GATEWAY

You can reset the Gateway from the management software.

***To reset the Gateway:***

1) From the Main Toolbar, click **System Settings.**
2) In the **System Setting** tab, click **Reset System**.

## 4.9. CONFIGURING SPECIAL FEATURES

The section describes how to use VoIP²ALL's special features, including:

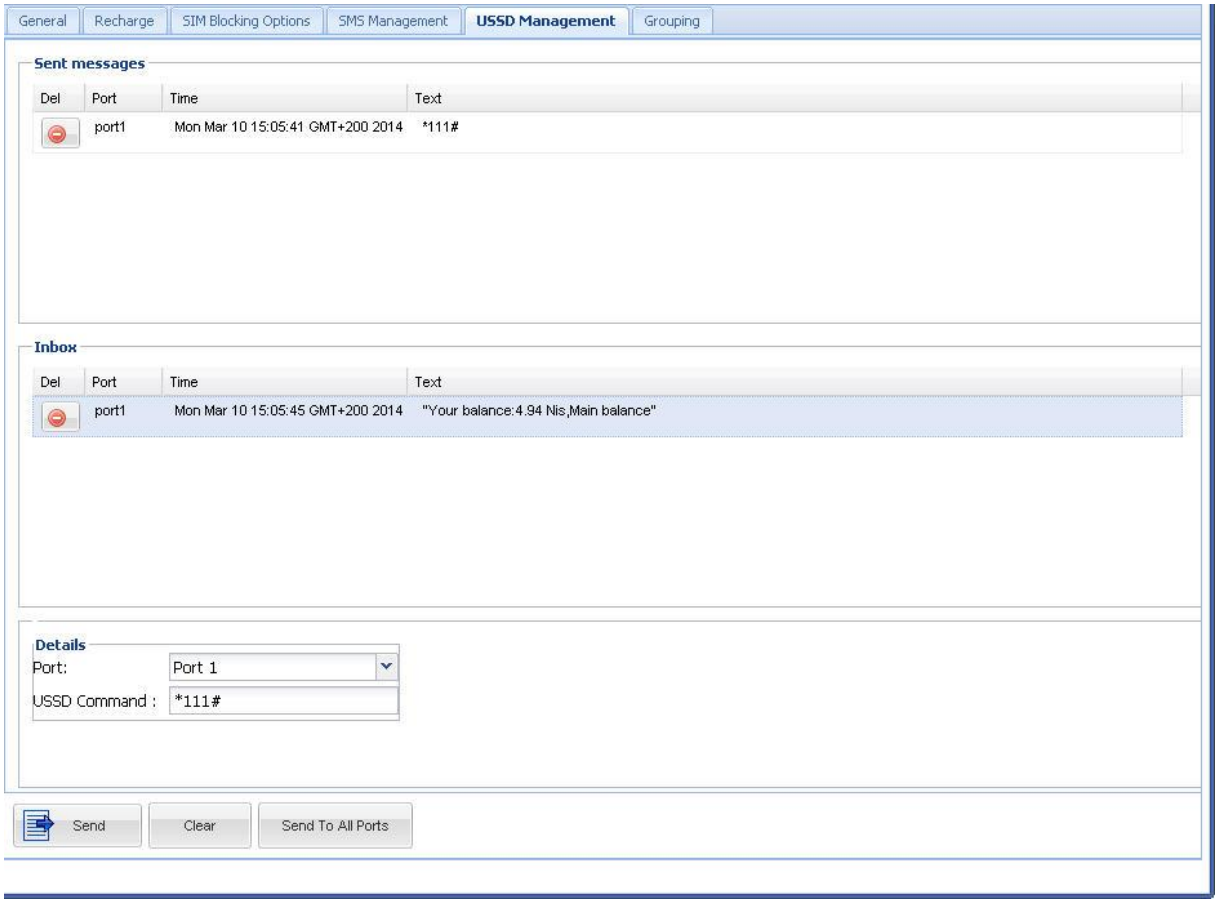
- ***Balance Check*** on page 53
- ***Network Announcement Message Detection*** on page 55
- ***Port Test Calls*** on page 55
- ***Source Routing*** on page 56
- ***Callback*** on page 58
- ***BCCH Configuration*** on page 58
- ***Sending and Receiving SMS*** on page 60

### 4.9.1. BALANCE CHECK

Using the **USSD Management** tab, you can check the balance of one or all the registered SIMs and you can recharge the balance of the SIMs.

***To check the SIM balance of a SIM:***

1) On the Main Toolbar, click **Cellular**.
2) Select the **USSD Management** tab. The following window appears:




3) In **Port** Select the SIM port.
4) In the **USSD Command** enter the balance request command.
5) Click **Send**. The **Sent Messages** will show the balance check command that was sent. The **Inbox** will show the reply from the network.

### *To check the SIM balance of all the SIMs:*

1) On the Main Toolbar, click **Cellular**.
2) Select the **USSD Management** tab.
3) In the **USSD Command** enter the balance request command.
4) Click **Send to All Ports**. The **Sent Messages** will show the balance check commands that were sent. The **Inbox** will show the replies from the network.

### *To recharge a SIM balance:*

1) On the Main Toolbar, click **Cellular**.
2) Select the **USSD Management** tab.
3) In **Port** Select the SIM port.
4) In the **Command** enter the balance recharge command followed by the voucher.
5) Click **Send**. The **Sent Messages** will show the recharge command that was sent. The **Inbox** will show the reply from the network.

Note: It may take few seconds for the network to recharge the SIM. You must wait few seconds before rechecking the balance.

### 4.9.2. NETWORK ANNOUNCEMENT MESSAGE DETECTION

This advanced feature is designed to block cellular network messages.

The cellular network answers a call with a message faster than a mobile phone.

When enabled, if the Gateway detects that the call was answered below the **Detect "Connect" Before (sec)**, it disconnects the call. After a number of consecutive detections, defined in **Block after Consecutive Detections,** it blocks the SIM. See ***Blocking SIMs*** on page 43.

Note: This feature works only when the network message comes with **"Connect**".

***To configure Network Announcement Message Detection:***

1) On the Main Toolbar, click **Cellular**.
2) Select the **SIM Blocking Options** tab.
3) In the **Network Announcement Message Detection** section, check **Active**.
4) In **Detect "Connect" Before (sec)**, enter the maximum time in seconds the **"Connect"** takes to arrive when the network answers a call with a message.

Note: **Setting the " Detect "Connect" Before (sec)" higher than 6 seconds may result in regular calls being disconnected.**

5) In the **Block after Consecutive Detections**, enter the number of consecutive network messages detections before the SIM is blocked.

Note: Only SIM Server SIM that work in Call Duration mode will be blocked.

6) Press **Save**.

### 4.9.3. PORT TEST CALLS

The Test Call feature randomly generates calls from the cellular ports to predefined destinations. You can use this feature to test incoming calls to the cellular ports.

***To setup the Test Call:***

1) On the Main Toolbar, click **Advanced**.
2) Select the **Test Call** tab.
3) Select the ports to call by clicking the **Active** box next to the port in the **Cellular Ports**.
4) In **Call Numbers**, enter the list of numbers to call from the selected ports.
5) In the **Call Timers**, define the following parameters for the calls:
   - **Calls Duration** - The minimum and maximum length of the calls. A call lasts a random amount of seconds within this range.

- **Delay between Calls** - The minimum and maximum length of time between the calls. The time between calls will be a random amount of seconds in this range.
- **Start Time** - The time to start the calls.
- **End Time** - The time to stop the calls.

6) Click **Save**.
7) To stop Test Calls, Remove the check from the active box.
8) Click **Save**

***To make incoming calls to the cellular ports:***

1) On the Main Toolbar, click **Advanced**.
2) Select the **Test Call** tab.
3) Select the ports to call from by clicking the **Active** box next to the port in the **Cellular Ports**.
4) In **Call Numbers**, enter the ports SIM numbers.
5) In the **Call Timers**, define the parameters for the calls.
6) Click **Save**
7) Press **Start**.

***To Stop making calls:***

1) On the Main Toolbar, click **Advanced**.
2) Select the **Test Call** tab.
3) Press **Stop**.

### 4.9.4. SOURCE ROUTING

Using the Source Routing feature, you can direct calls according to their calling number or IP address from where the call originated, rather than the destination of the calls (i.e. the prefix of the dialed number).

Note: **When the Source Routing is enabled, all the settings in the prefixes window are irrelevant and the Gateway stops routing calls according to prefixes.**

**Source Routing functions as follows:**

A call comes from any cellular port or VoIP.

When the calling number is in the range of defined numbers or IP addresses, the Gateway routes the call to the port that is defined for this range.

If more than one port is defined, the Gateway divides the calls between the ports.

If there are no available ports, the Gateway declines the call and you will hear a busy tone.

Note: When using Source Routing by IP, the Gateway only routes SIP calls.

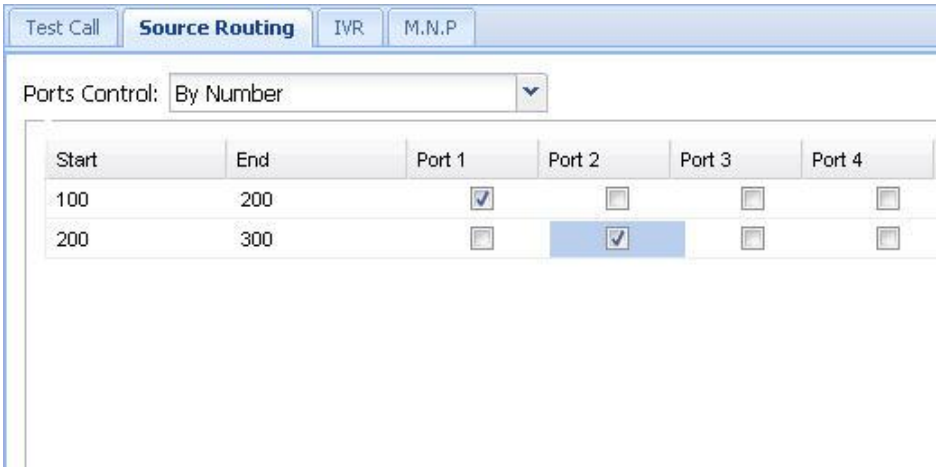
***To configure Source Routing:***

1) On the Main Toolbar, click **Advanced.**

2) Select the **Source Routing** tab.
3) In **Ports Control**, select one of the following routing modes:
   - **By Number** – The port to send out the call will be selected by the caller number.
   - **By IP** – The port to send out the call will be selected by the caller IP.
4) In the Ports Control table, configure the following parameters in an empty row (If there is not an empty row in the table, click **Add Row** at the bottom of the window):
   - **Start** - the beginning of the range for the routed calls
   - **Stop** - the end of the range for the routed calls
5) Select the ports to route the calls by clicking the check boxes in the row.
6) Click the **Active** check box to enable the routing.
7) Click **Save**.

## Example of selecting the port to call out by the calling number:

1) The **Source Routing** is set :




2) This call come to the gateway.

**Via: SIP/2.0/UDP 192.168.0.15:22852;branch=z9hG4bK-d87543-9d4630268976cd37-1--d87543-;rport**

**Max-Forwards: 70**

**Contact: <sip:101@192.168.0.15:22852>**

**To: "0525555555"<sip:0525555555@192.168.0.3>**

**From: "101"<sip:101@192.168.0.3>;tag=a9537247**

**Call-ID: f5270e5227206e44MGFhNmExYzg4MzY5Nzk1NmQwYmMyMmUxZmM5MTRmMTc.**

**CSeq: 1 INVITE**

3) The calling number is "101". The call will be called out from port 1.

### 4.9.5. CALLBACK

Using the **Callback** feature, you can configure the Gateway to call a user back and bill the call to the Gateway SIM.

- ***To configure Callback:***

1) On the Main Toolbar, click **General Settings**.
2) Select the **Users** tab.
3) In the Users list, locate the user you want to work in Callback mode.
4) In the **Capabilities** parameter for the selected user, enter 8 to enable the Callback.

Note: The Gateway makes a callback to the user's cellular number. Verify that the prefix of this number is defined in the prefix table and the **Remove Prefix** box is 0.

5) Click **Update**.
6) You will be asked : Are you sure? Answer **YES** to continue

- ***To use Callback:***

1) Call the Gateway from the user's cellular number.
   The Gateway recognizes the caller as working in Callback mode and rejects the call. The Gateway then calls the you back and you hear a dial tone to make a call.
2) Dial the number of the SIP client you want to call.
   The call is billed to the Gateway's SIM.

### 4.9.6. BCCH CONFIGURATION

Using the BCCH feature, you can lock a SIM to use a specific BCCH or rotate the BCCH the SIM is using.

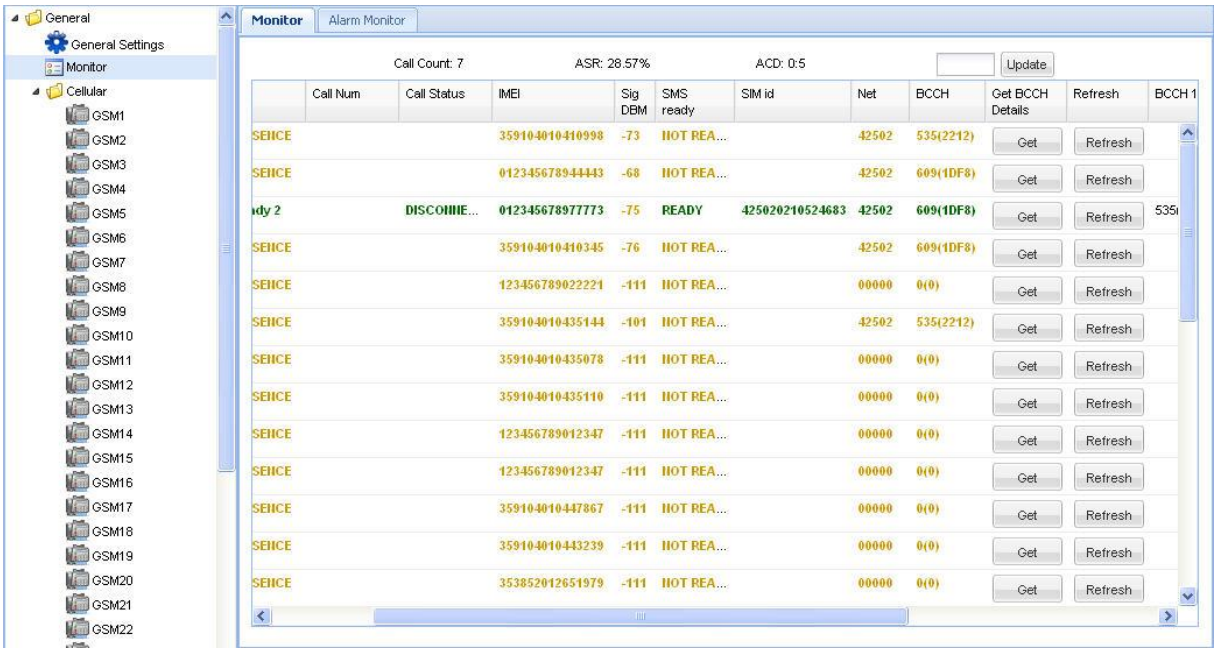
You can configure the BCCH lock for:

- Local SIM
- SIM Server

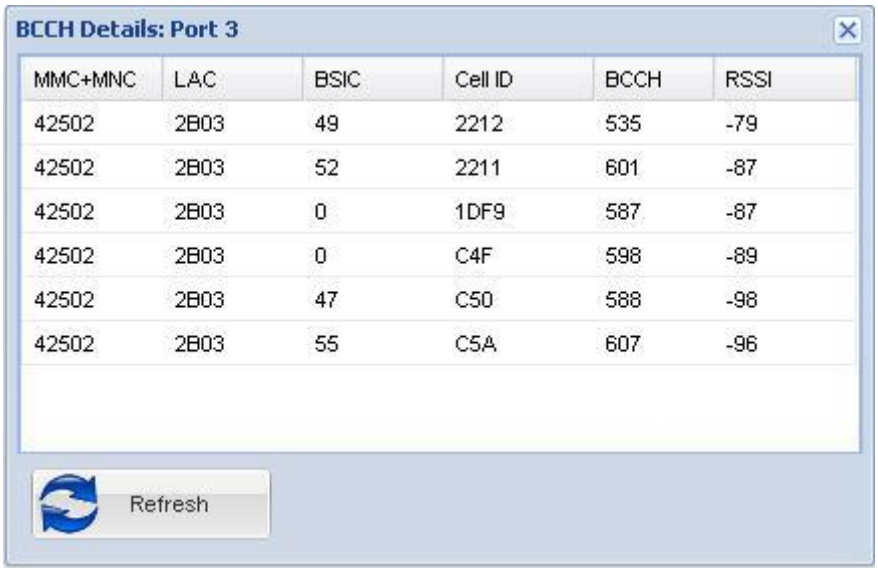
- ***To monitor the BCCH cells:***

1) On the Main Toolbar, click **Monitor**.

2) Click **GET**. The following table appears:




You will see the surrounding antennas available for that port




Each row displays the following information:

- LAC - Location Area Code.
- CI - Cell ID
- MCC - Mobile Country Code
- BSIC - Basic Station Identity Code
- BCCH - Broadcast Control Channel
- RSSI- Receiver Signal Strength.

You can close the BCCH Control window by clicking on the X button.

### *To configure the Local SIM BCCH:*

1) On the Main Toolbar, click **Cellular**.
2) From the ports list, select a port to configure.
3) Select the **Local SIM** tab.
4) In the Local SIM parameters list, define the following:

Note: To work with the **BCCH timer**, the **BCCH** parameter must be undefined.

- **BCCH -** The BCCH you want the SIM to lock on. When this parameter is undefined, the SIM works in Auto mode and locks on to the BCCH with the highest reception level.
- **BCCH timer** - When defined, the BCCH is rotated according to this amount of time.
- **BCCH rssi** - When rotating the BCCH, the port randomly chooses only BCCH with a higher reception level than the rssi definition.

Note: If the BCCH rssi is defined below -100 db, the SIM may not be able to register.

5) Click **Save Local SIM**.
6) To apply the changes, reset the port.

### *To configure the SIM Server BCCH:*

1) On the Main Toolbar, click **Virtual SIM**.
2) Select the **SIM Servers** tab.
3) Click **Synchronize**.
4) Select the Profile tab.
5) In **Servers Profile Selection**, select a profile you want to configure.
6) In the **Servers Profiles** table, click **+** next to the BCCH parameter.
7) In **Channel Selection**, select the mode of the BCCH lock:
   - **Auto** - Automatically locks on the best reception BCCH.
   - **Lock** - Locks on to the BCCH that you define in the **BCCH**.
   - **Random** - Rotates the BCCH. The rotation is performed according to the **BCCH Timer**, measured in seconds, between all BCCH which have better reception than the **BCCH rssi**.

Note: If the BCCH rssi is defined below -100 db, the SIM may not be able to register.

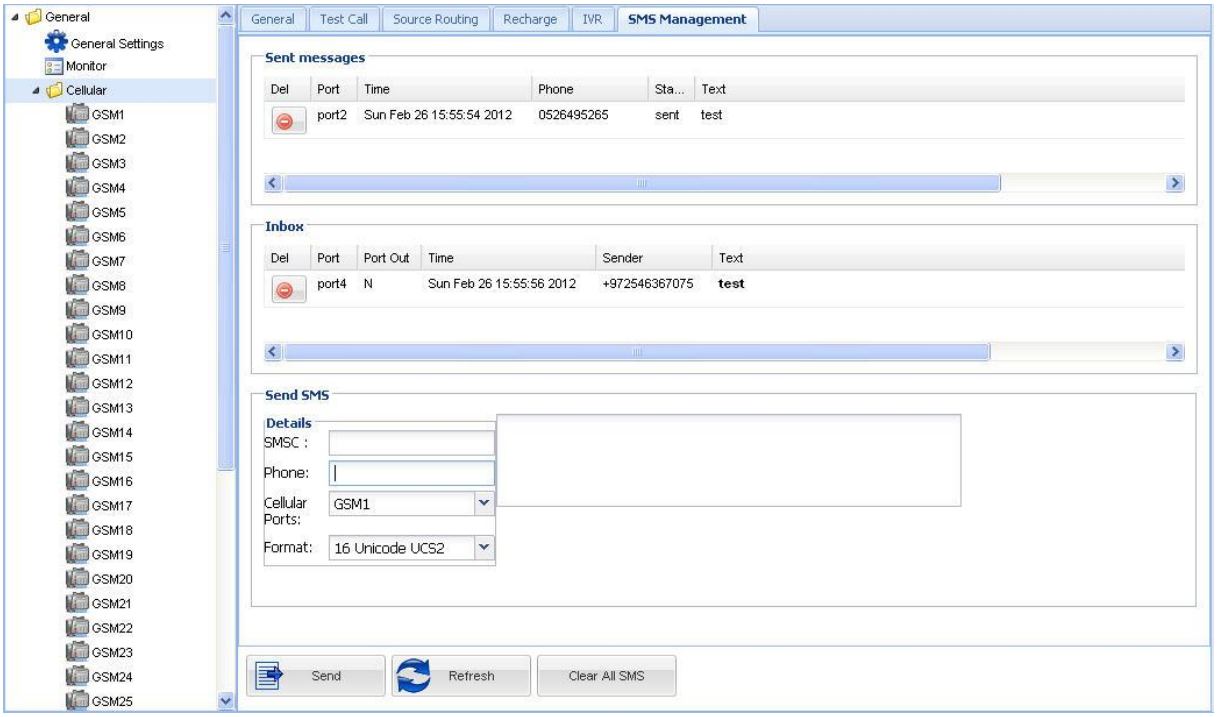
8) Click **Save**.
9) To apply the changes, redefine the Time Tables or reset the Gateway.

## 4.9.7. SENDING AND RECEIVING SMS

In the Gateway, you can send and receive SMS from each port.

### *To send an SMS:*

1) On the Main Toolbar, click **Cellular**.
2) Click **SMS Management** tab. The following window appears:




3) In **Cellular Ports**, select the port via which to send the SMS.
4) In message box, enter the SMS message.
5) In **Phone Number**, enter the number to send the message.
   The **SMSC Number** of the SIM appears automatically.
6) Click **Send** to send the SMS.

### Receiving SMS

When an SMS arrives from the cellular network you will see the message in the **Inbox**.

Click the **Delete** button on the row to delete the message.

Note: The Gateway saves the last 100 SMS messages.

# 5. MONITORING CALLS

This section describes how to use the call monitoring features, including:

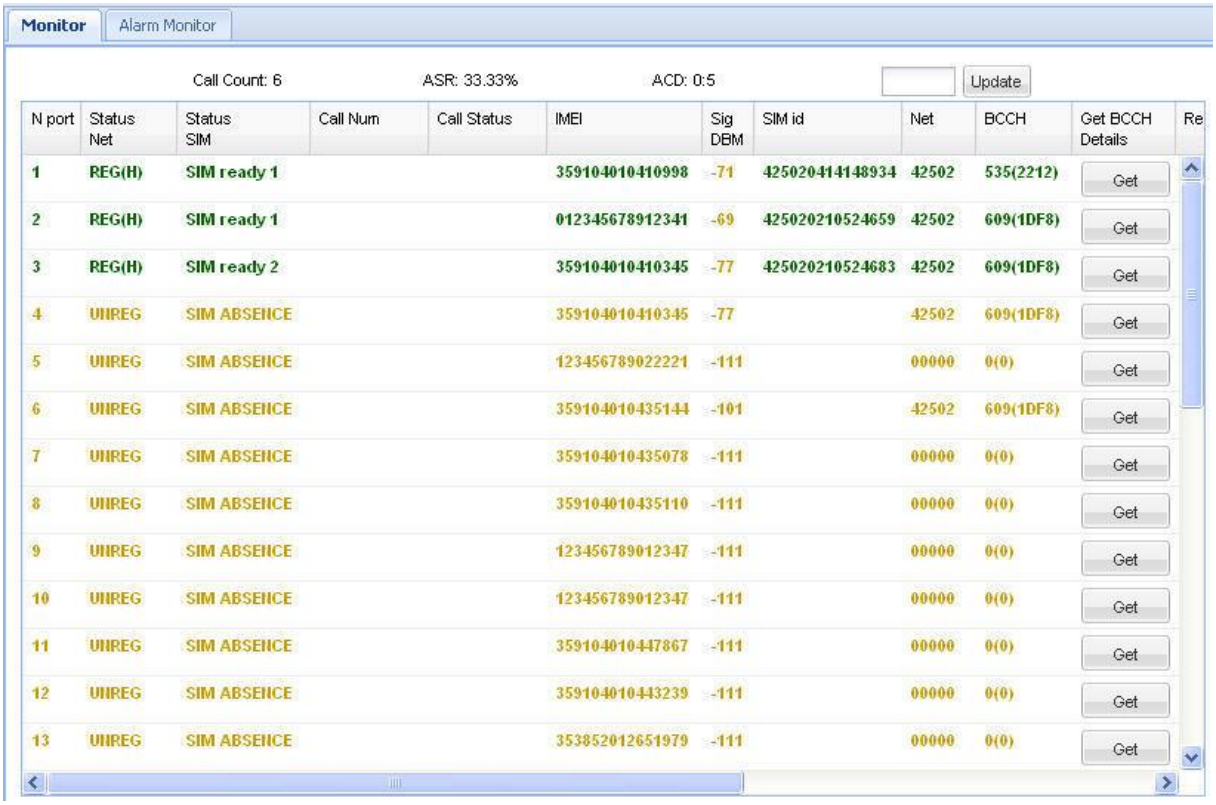

- ***Port Monitor*** on page 62
- ***Call Monitor*** on page 63
- ***CDR (Call Detail Reporting)*** on page 64
- ***Alarm Monitor*** on page 65
- ***ISDN Line*** on page 66


## 5.1. PORT MONITOR

This section describes how to monitor the cellular channels. You can see all of the information on the SIM registration and the status of the calls.

- ***To monitor calls from cellular ports:***

1) On the Main Toolbar, click **Monitor.**
2) Select the **Monitor** tab.
   The monitor screen appears, displaying the cellular ports. The number of ports available is according to the type of the Gateway.




| N port | Status Net | Status SIM | Call Num | Call Status | IMEI | Sig DBM | SIM id | Net | BCCH | Get BCCH Details | Re |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | REG(H) | SIM ready 1 | | | 359104010410998 | -71 | 425020414148934 | 42502 | 535(2212) | Get | |
| 2 | REG(H) | SIM ready 1 | | | 012345678912341 | -69 | 425020210524659 | 42502 | 609(1DF8) | Get | |
| 3 | REG(H) | SIM ready 2 | | | 359104010410345 | -77 | 425020210524683 | 42502 | 609(1DF8) | Get | |
| 4 | UNREG | SIM ABSENCE | | | 359104010410345 | -77 | | 42502 | 609(1DF8) | Get | |
| 5 | UNREG | SIM ABSENCE | | | 123456789022221 | -111 | | 00000 | 0(0) | Get | |
| 6 | UNREG | SIM ABSENCE | | | 359104010435144 | -101 | | 42502 | 609(1DF8) | Get | |
| 7 | UNREG | SIM ABSENCE | | | 359104010435078 | -111 | | 00000 | 0(0) | Get | |
| 8 | UNREG | SIM ABSENCE | | | 359104010435110 | -111 | | 00000 | 0(0) | Get | |
| 9 | UNREG | SIM ABSENCE | | | 123456789012347 | -111 | | 00000 | 0(0) | Get | |
| 10 | UNREG | SIM ABSENCE | | | 123456789012347 | -111 | | 00000 | 0(0) | Get | |
| 11 | UNREG | SIM ABSENCE | | | 359104010447867 | -111 | | 00000 | 0(0) | Get | |
| 12 | UNREG | SIM ABSENCE | | | 359104010443239 | -111 | | 00000 | 0(0) | Get | |
| 13 | UNREG | SIM ABSENCE | | | 353852012651979 | -111 | | 00000 | 0(0) | Get | |

The following information appears:

The color indicators:

- Red - indicates there is no connection to the SIM.
- Yellow - indicates there is no SIM registering in the port.
- Green - indicates there is a SIM registering in the port.

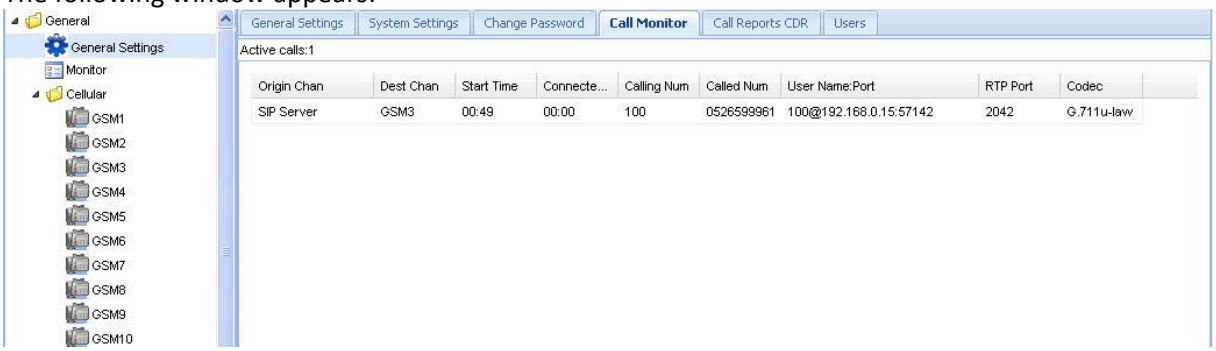
- Port - the number of port
- Status NET- The SIM is Registered to Network or unregistered
- Status SIM- The SIM is Ready or Absent.
- Call Num- the number calling
- Call Status- The status of the call
- IMEI- the IMEI number of the module
- SMS- Not in use.
- USSD- Not in use.
- SIG DBM- The Signal strength in db
- SMS ready- Ready or not ready
- IMSI - the SIM card IMSI number.
- Net - the code of the cellular network
- BCCH - the number of the Broadcast Channel
- Get BCCH- the surrounding antennas the port receive

## 5.2. CALL MONITOR

When you are calling from, or to a SIP, the call appears in the Call Monitor window. You can see all the information on this call and have the option of disconnecting it.

- ***To View active VoIP calls:***

3) On the Main Toolbar, click **Monitor**.
4) Select the **Call Monitor** tab.
   The following window appears:




The call information includes:

- **Org Ch** - The channel that originated the call.
- **Dest Ch** -The channel that received the call.
- **Start Time** - The time the **INVITE** message arrived.
- **Connected Time** - The time the **Connect** message arrived.
- **Calling Num** - The number of the calling party.

- **Called Num** - The number that was called.
- **User Name:Port** - The User name, IP address and port of the calling VoIP.
- **RTP Port** - The port that the Gateway sends the RTP packets to.
- **Codec** - The voice **CODEC** the call is made with.

5) (Optional) Disconnect a call by clicking **Disconnect** in the call's row.

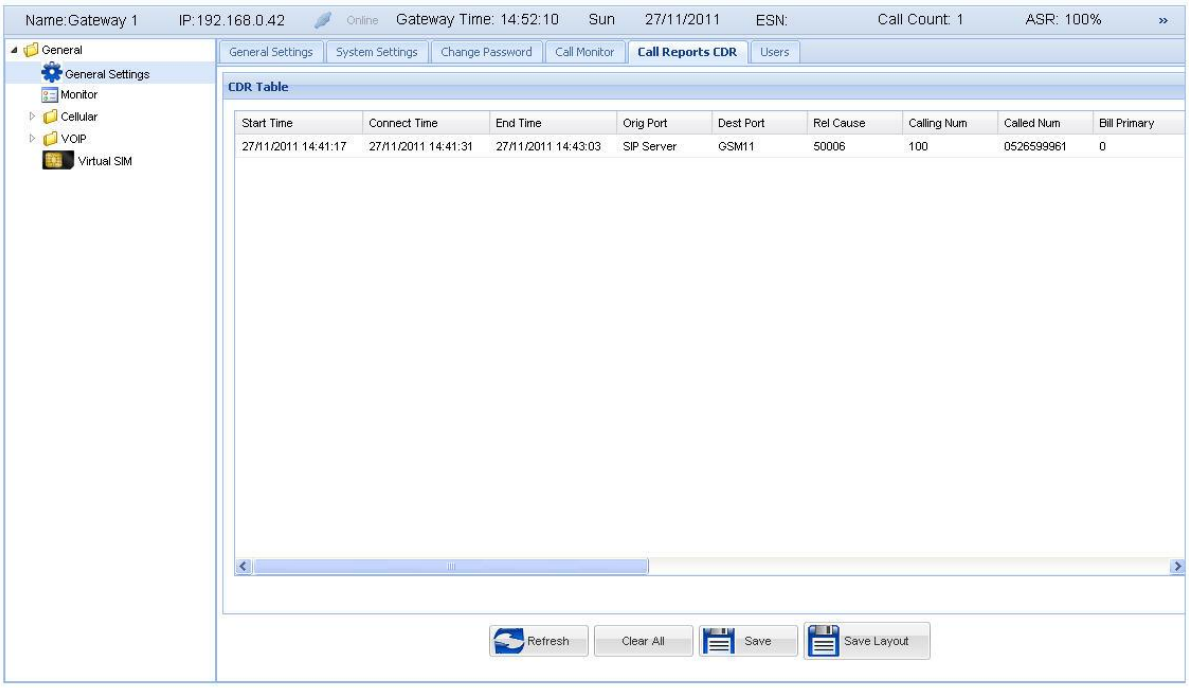
## 5.3. CDR (CALL DETAIL REPORTING)

The Gateway records the call information of the last 100 calls. The call records (CDR in short) are kept on the RAM memory of the Gateway.

- ***To view the call reports:***

1) On the Main Toolbar, click **General settings**

2) Click **Call Reports CDR tab**.
The CDR screen
appears.




3) Click **Refresh** to display the call reports from the Gateway.
The PC software reads the records from the Gateway and clears them from the Gateway memory.
The Call Report window displays the following information:
   - **Start Time** - The time the call was initiated.
   - **Connect Time** - The time the call was connected.
   - **End Time** - The time the call was disconnected.
   - **Orig Port** - The port that initiated the call.

- **Dest Port** - The port that the call went to.
- **Rel Cause**- The disconnection code.
- **Calling Number** - The number that initiated the call.
- **Called Number** - The number that was called.
- **Call Count** - The amount of calls this SIM has made.
- **Failed Calls** - The amount of unsuccessful calls this SIM has made.
- **Card Num** - The number of the SIM Server Card that the SIM is located.
- **SIM Num** - The location of the SIM socket in the card.
- **CDR Num**- the CDR sequential number

**Call Duration** information:

- **Bill Primary** - The SIM Primary Bill Interval.
- **Bill Units Primary** - The SIM Primary Cost per Bill Int .
- **Primary Interval Count** - The SIM Primary Interval Count.
- **Bill Secondary** - The SIM Secondary Bill Interval.
- **Bill Units Secondary** - The SIM Secondary Cost per Bill Int .
- **Current Duration Balance** - The amount of units that is left on the SIM for the day.
- **Current Duration Balance** - The SIM Current Balance.(total of the SIM)
- **Call Duration** - The length of the call (in seconds).

All the times are in the format (Day/Month/Year, Hour/Minutes/Seconds).

1) (Optional) Click **Clear** to clear the CDR window.
2) **Save**. (not active)

Note: When the Gateway is reset, the call records in the Gateway memory are erased.

## 5.4. ALARM MONITOR

The window will show the alarm of the ISDN lines and the GSM ports.

***To View the alarm:***

1) On the Main Toolbar, click **Monitor**.
2) Select the **Alarm Monitor** tab.
   The monitor window appears.

***To clear the monitor window:***

1) On the Main Toolbar, click **Monitor**.
2) Select the **Alarm Monitor** tab.
3) Click **Clear Monitor**.

***To reset a cellular port:***

1) On the Main Toolbar, click **Monitor**.
2) Select the **Alarm Monitor** tab.
3) In **Cellular Ports**, select the port to reset.

4) Click **Reset Port**.

## 5.5. ISDN LINE (OPTIONAL)

In gateway that include PRI E1, This window will show the status of the ISDN.

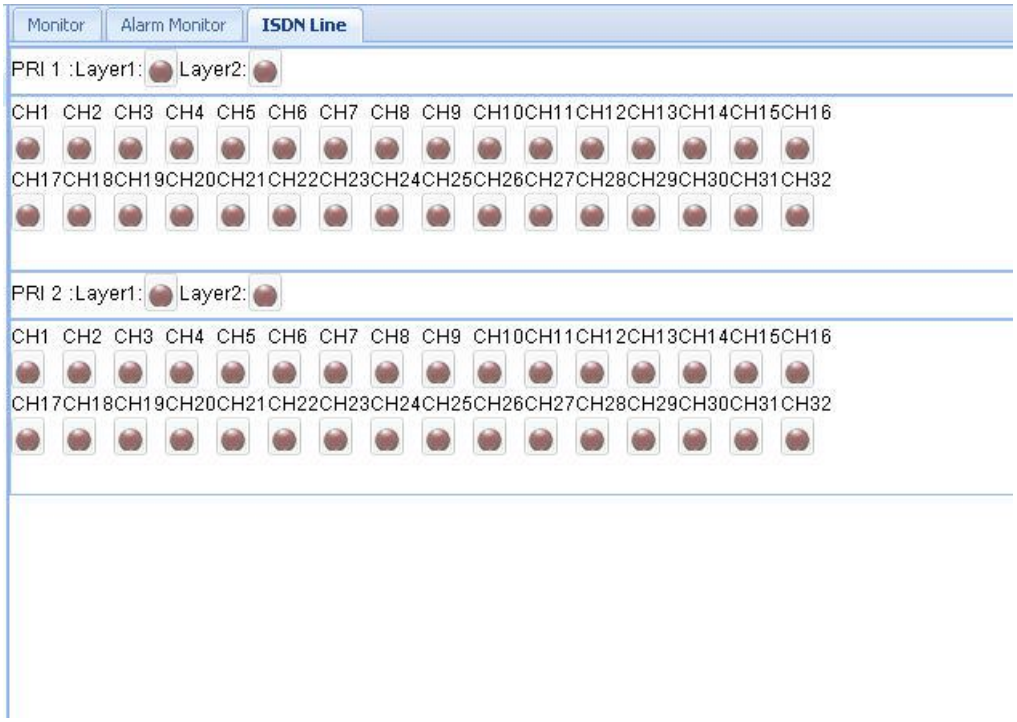
- ***To View the alarm:***

1) On the Main Toolbar, click **Monitor**.
2) Select the **ISDN Line** tab.
3) The window displays the following information:
   - **Layer1** - The ISDN Layer1 syncronization.
   - **Layer2** - The ISDN Layer2 syncronization.
   - **Channel** – The B-Channel Status:

The color indicators:

Red – Not Active.

Green - Active.


Monitor
Alarm Monitor
ISDN Line
PRI 1 :Layer1: Layer2:
CH1 CH2 CH3 CH4 CH5 CH6 CH7 CH8 CH9 CH10 CH11 CH12 CH13 CH14 CH15 CH16
CH17 CH18 CH19 CH20 CH21 CH22 CH23 CH24 CH25 CH26 CH27 CH28 CH29 CH30 CH31 CH32
PRI 2 :Layer1: Layer2:
CH1 CH2 CH3 CH4 CH5 CH6 CH7 CH8 CH9 CH10 CH11 CH12 CH13 CH14 CH15 CH16
CH17 CH18 CH19 CH20 CH21 CH22 CH23 CH24 CH25 CH26 CH27 CH28 CH29 CH30 CH31 CH32

# 6. APPENDICES

This section includes the following appendices:


- ***Appendix A: Working with COM Port*** on page 67
- ***Appendix B: Sending USSD (Unstructured Supplementary Service Data) commands in the DEBUG screen*** on page 71
- ***Appendix C: PC to Gateway Direct LAN Access*** on page 72
- ***Appendix D: E1-1 & E1-2 dipswitch settings*** on page 78
- ***Appendix E: Compatibilty with VoIP2ALL management Software*** on page 79


## 6.1. APPENDIX A: WORKING WITH COM PORT

The Com Port connection gives you direct access to the Gateway processor.

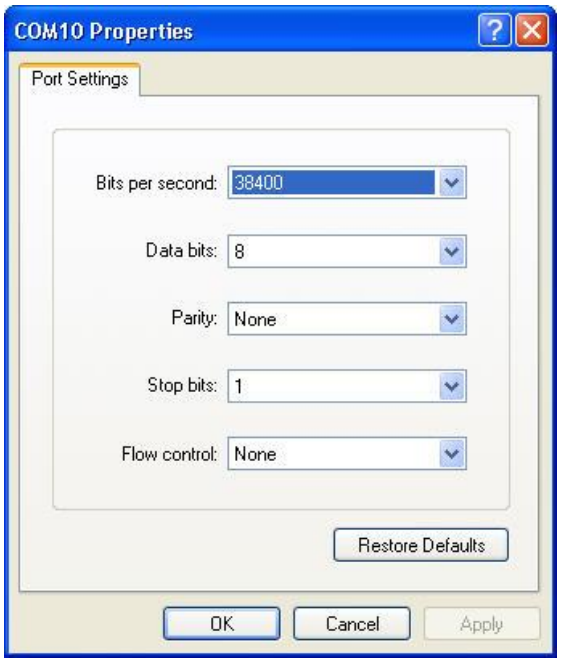
The primary use is to see the IP address in the Gateway. This can help when the user has forgotten the address.

Com Port is generally used for debugging and support related issues.

- ***To connect the COM Port:***

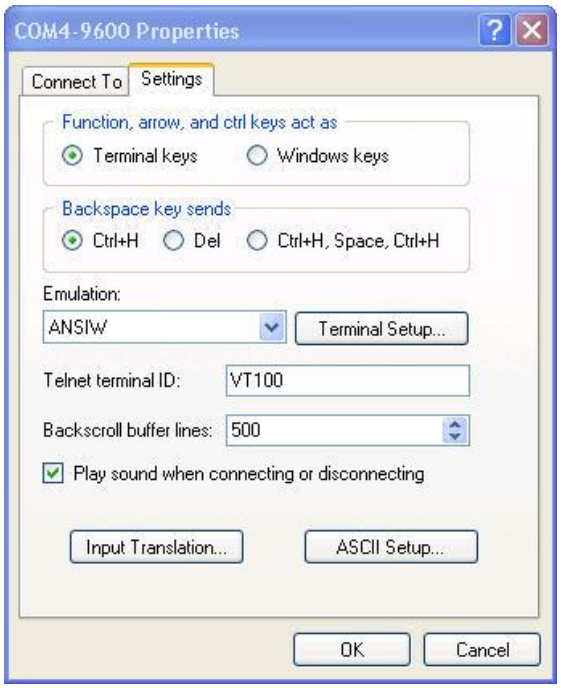
1) Power off the Gateway.
2) Connect the USB COM Cable from the Gateway to the PC USB.
3) Power on the Gateway. The PC will recognize the USB as new hardware and will ask you to install the driver.
4) Downlod the USB driver from our website at: http://www.eurotech-communication.com/images/Sectionsm/pages/files/3_1382961375.zip
5) Extract the zip file.
6) Select to install the driver from a specific location.
7) Select the **USB driver** in the extracted folder.
8) Install the driver.
9) In the PC, open the Hyper Terminal program.
10) Disconnect the Hyper Terminal by clicking **Disconnect.**
11) Click then **Properties**.

12) In the **Connect To** tab click **Configure.**
The **Port Setting** should be:

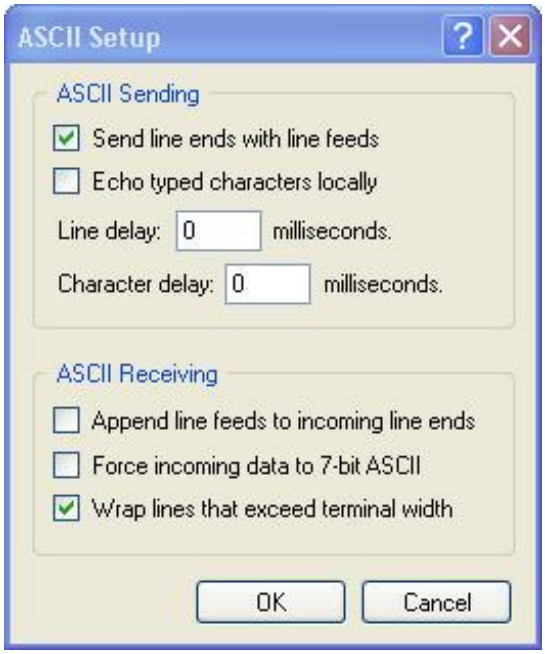



13) Click **OK.**

14) Select the **Settings** tab.



15) Click **ASCII Setup**.
The **ASCII** settings should be:




16) Click **OK**.

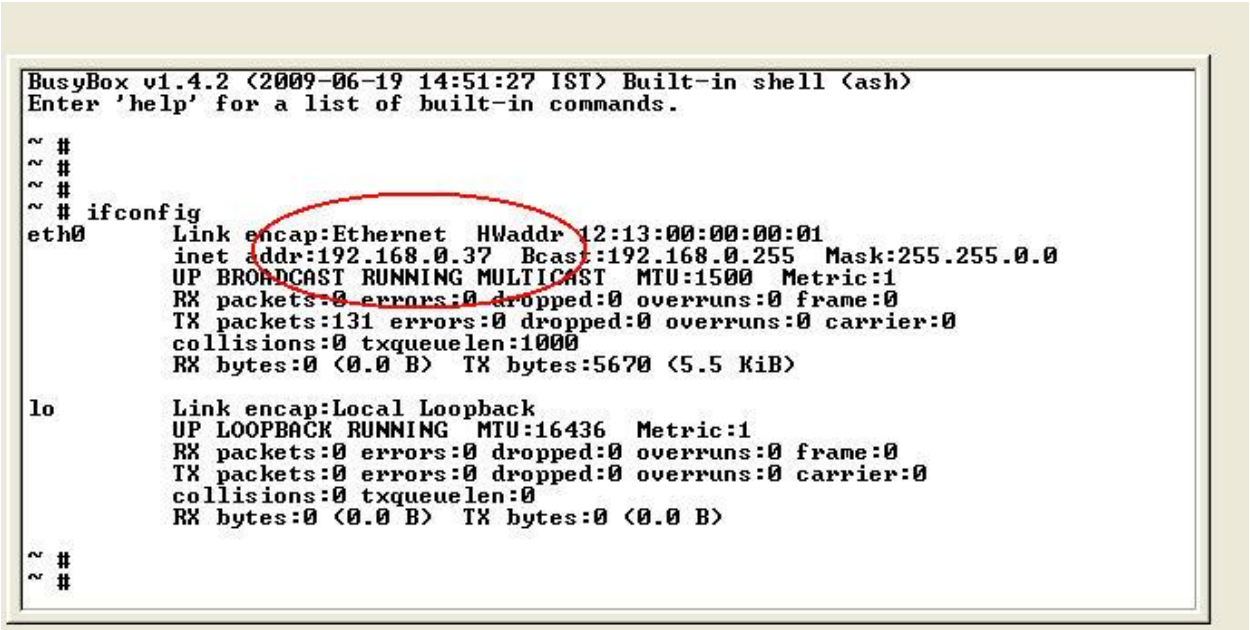
17) In the Hyper Terminal, click **Connect.**
When restarting the Gateway you will see the initialization process. Wait until it is finished.

18) Click **Enter**. On screen you will see **(none) login:** .

19) Enter **root**. On screen you will see **password:** .

20) Enter **euro7002**. On screen you will see **#**.

21) To see the IP settings, write the command **ifconfig** and click **Enter**.
The following window appears (The IP Address of the Gateway is marked in a red circle.):


BusyBox v1.4.2 (2009-06-19 14:51:27 IST) Built-in shell (ash)
Enter 'help' for a list of built-in commands.
~ #
~ #
~ #
~ # ifconfig
eth0 Link encap:Ethernet HWaddr 12:13:00:00:00:01
inet addr:192.168.0.37 Bcast:192.168.0.255 Mask:255.255.0.0
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:0 errors:0 dropped:0 overruns:0 frame:0
TX packets:131 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1000
RX bytes:0 (0.0 B) TX bytes:5670 (5.5 KiB)
lo Link encap:Local Loopback
UP LOOPBACK RUNNING MTU:16436 Metric:1
RX packets:0 errors:0 dropped:0 overruns:0 frame:0
TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:0
RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)
~ #
~ #

## 6.2. APPENDIX B: SENDING USSD (UNSTRUCTURED SUPPLEMENTARY SERVICE DATA) COMMANDS IN THE DEBUG SCREEN

The VoIP²ALL allows you to send and receive USSD commands from the Debug screen.

This option is used to check and recharge balances with USSD commands.

To allow debugging enter the IP address/debug.htm, for example:

http://10.16.2.245/debug.htm

- ***To send USSD commands from the Debug screen:***

1) On the Main Toolbar, click **Debug**.
2) In the lower left corner of the screen, click the **Enable Debug**.
3) In the command box, enter the USSD command you want to send.
   The command format should be:
   **C_USDXY,<COMMAND>,<Number>,**
   - **X** - The number of the cellular card (from 1 to 4).
   - **Y** - The number of the module in the cellular card (from 1 to 4).
   - **COMMAND** - is the operation mode:

- COMMAND: 1 = start session
- COMMAND: 2 = stop session

   - **Number** - is the USSD number to send.

The following table lists the possible XY indexes:

| XY POSSIBLE INDEXES | |
|---|---|
| Port1 = 11 | Port9 = 31 |
| Port2 = 12 | Port10 = 32 |
| Port3 = 13 | Port11 = 33 |
| Port4 = 14 | Port12 = 34 |
| Port5 = 21 | Port13= 41 |
| Port6 = 22 | Port14 = 42 |
| Port7 = 23 | Port15 = 43 |
| Port8 = 24 | Port16 = 44 |

4) Click **Send**.
   The reply from the network appears in the **Debug** screen.
   The reply format is:
   **A_USDXY,Z,<COMMAND>,<Message>,**
   - **X** - The number of the cellular card (from 1 to 4).
   - **Y** - The number of the module in the card (from 1 to 4).

- **Z** -The number of the SIM (1 is Local SIM, 2 is SIM Server SIM).
- **COMMAND** - is the USSD reply code.

- COMMAND: 0 = no further user action required
- COMMAND: 1 = further user action required
- COMMAND: 2 = USSD terminated by network
- COMMAND: 4 = Operation not supported

- **Message** - is the USSD reply message.

### Example

Here is example of sending the USSD command to check the balance of the SIM in port 1:

- The command sent from debug:
  **C_USD11,1,*101#,**
- Reply from the Gateway that the command sent OK:
  **OK#11**
- The USSD command reply from network:
  **A_USD11,2,"Your balance is 24.69$",15**

## 6.3. APPENDIX C: PC TO GATEWAY DIRECT LAN ACCESS

The Gateway has a default IP of 10.16.2.245. If your PC's IP is in a different Subnet, you must define an IP in the same Subnet which enables you to connect to the Gateway with the PC software and define the permanent IP.

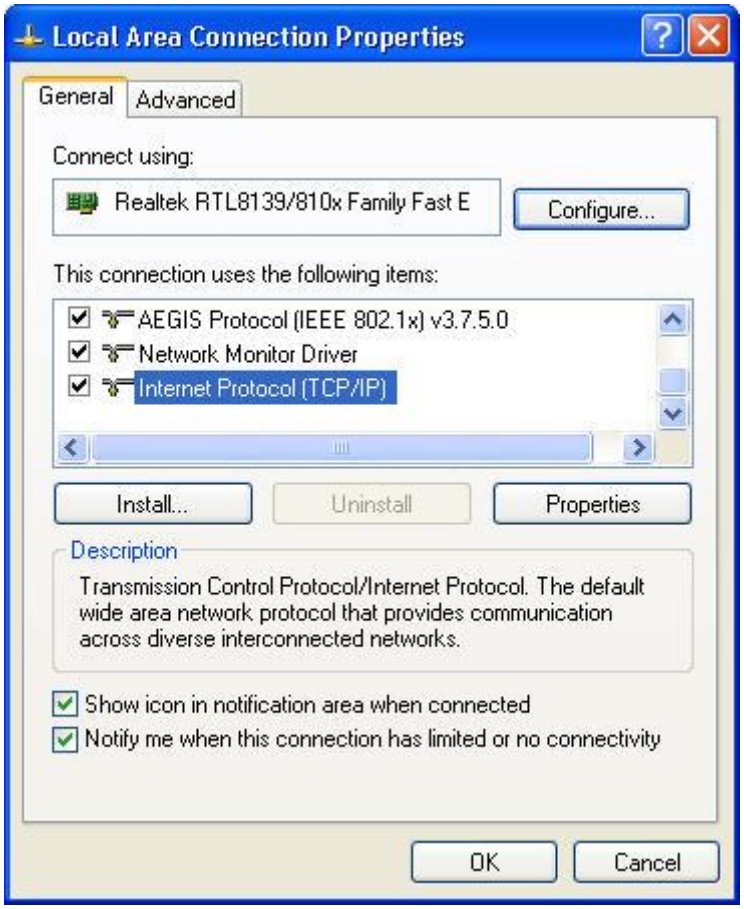
There are two options to connect to the Gateway:

- Connecting directly with a TCP/IP Cross Cable
- Connecting through an IP Switch

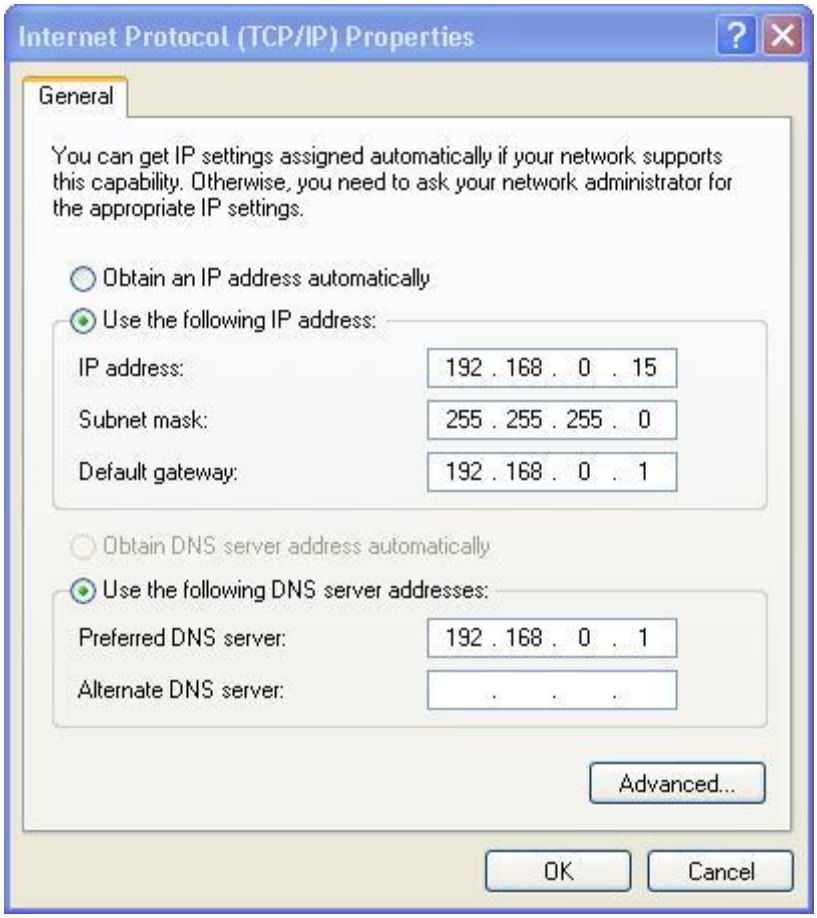
- ***To connect using a TCP/IP Cross Cable:***

1) Connect a TCP/IP Cross Cable from the Gateway LAN to the PC Net Card.
2) In Windows, click **Start** and select **Settings.**
3) Select **Network Connections.**
4) Select the network card in which the PC is connected to the Gateway.
5) Click **Properties**.

6) Select **Internet Protocol (TCP/IP)** and click **Properties.**



Here you see the IP settings in which the Gateway is connected to the Local network.

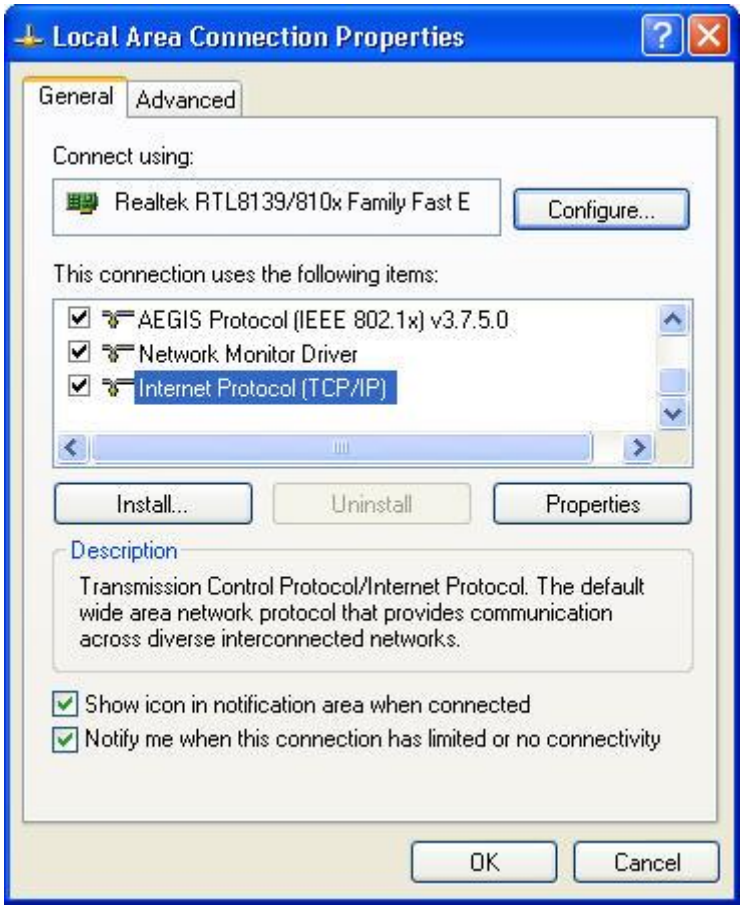

Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 0 . 15
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 0 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server: 192 . 168 . 0 . 1
Alternate DNS server:
Advanced...
OK
Cancel

7) In the **Internet Protocol TCP/IP Properties** window, select **Use the following IP Address.**
8) In the **IP Address** field, enter **10.16.2.244**. This is the new IP address of the PC. The Subnet Mask is filed automatically.
9) Click **OK.**
10) Close the **Local Area Connection** window.

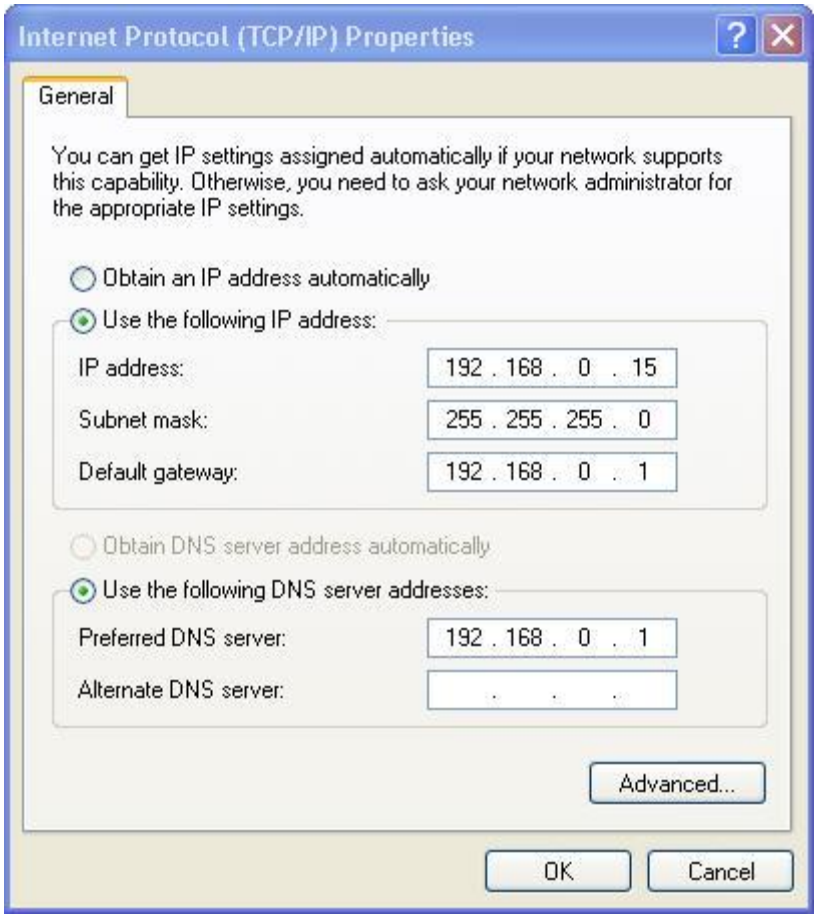
### *To connect through an IP Switch:*

1) Connect a net cable from the Gateway LAN to the PC Net Card.
2) In Windows, click **Start** and select **Settings.**
3) Select **Network Connections.**
4) Select the network card in which the PC is connected to the IP Switch.
5) Click **Properties**.

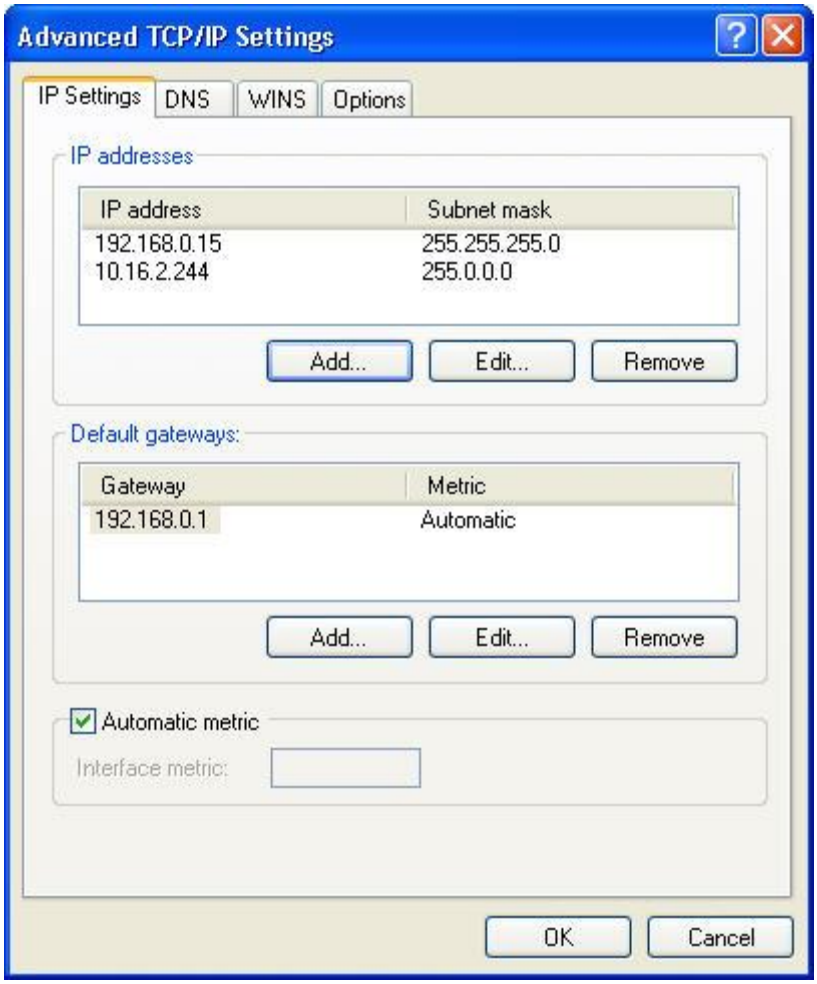
6) Select **Internet Protocol (TCP/IP)** and click **Properties.**



Here you see the IP settings in which the Gateway is connected to the Local network.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 0 . 15
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 0 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server: 192 . 168 . 0 . 1
Alternate DNS server:
Advanced...
OK
Cancel

7) Click **Advanced**.




8) In **IP Addresses**, click **Add**.

9) In the window that appears, enter **10.16.2.244.** This adds a new IP address to the PC. The Subnet Mask is filed automatically.

10) Click **Add**.

11) Click **OK.**

12) In the **Internet Protocols** window, click **OK**.

13) Close the **Local Area Connection** window.

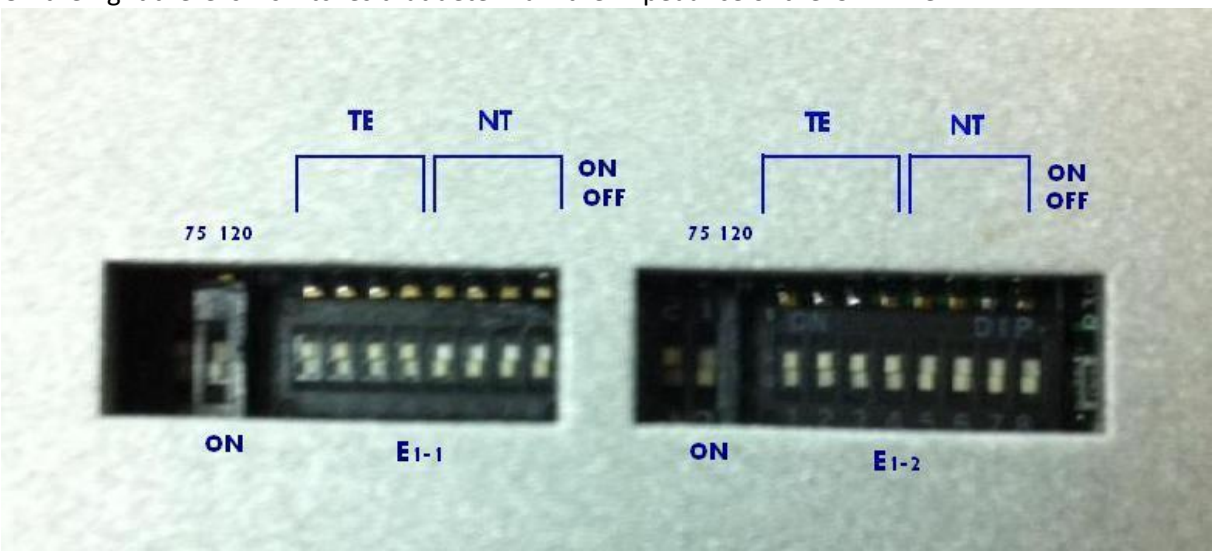
## 6.4. APPENDIX D: E1-1 & E1-2 DIPSWITCH SETTINGS (OPTIONAL)

In Gateway that has E1 interface, PRI1 and PRI2 are set by default to work in TE mode. In this settings you can connect the gateway E1-1 and E1-2 to an E1 card (in PBX or PRI gateway) that work in NT mode with a regular ISDN cable.

To connect the gateway to E1 card that is also working in TE mode use cross cable.

- ***Dipswitch configurations:***

Each E1 card has Dipswitchs that determain the ISDN hardware settings.
On the left there is 8 switches that determain the ISDN mode of the E1, NT or TE.
E1 in TE mode - The 4 left switchs should be ON and the 4 right switchs should be OFF.
E1 in NT mode - The 4 left switchs should be OFF and the 4 right switchs should be ON.
On the right there is 2 switches that determain the impedance of the ISDN line.




- ***Changing E1-1 or E1-2 port to work in NT mode:***

1) Go to the dipswitchs at the back of the gateway.
2) Set the left 4 switches to OFF.
3) Set the right 4 switches to ON.
4) Connect with the web gui to gateway.
5) Set in the PRI configuration tab the Type to NT.
6) Click Save.
7) Restart the gateway power.

- ***Changing E1-1 or E1-2 port ISDN impedance (When using a long ISDN cable):***

8) Go to the dipswitchs at the back of the gateway.
9) To add 75Ω to the line impedance, set the switch marked 75 to ON.
10) To add 120Ω to the line impedance, set the switch marked 120 to ON.
11) You can set any combination that will give you the best ISDN connection.

## 6.5. COMPATIBILTY WITH VOIP2ALL MANAGEMENT SOFTWARE

The Gateway configuration should be done with the web GUI. The 32CH gateway can be configured and monitored by the VoIP2ALL Management software with few exeptions:

- **ISDN** – Configuration section is only in web GUI.
- **ISDN Line** – Monitor is only in web GUI.
- **Prefix –** The **VoIP** and **Hosts** prefix should be set only using web GUI.